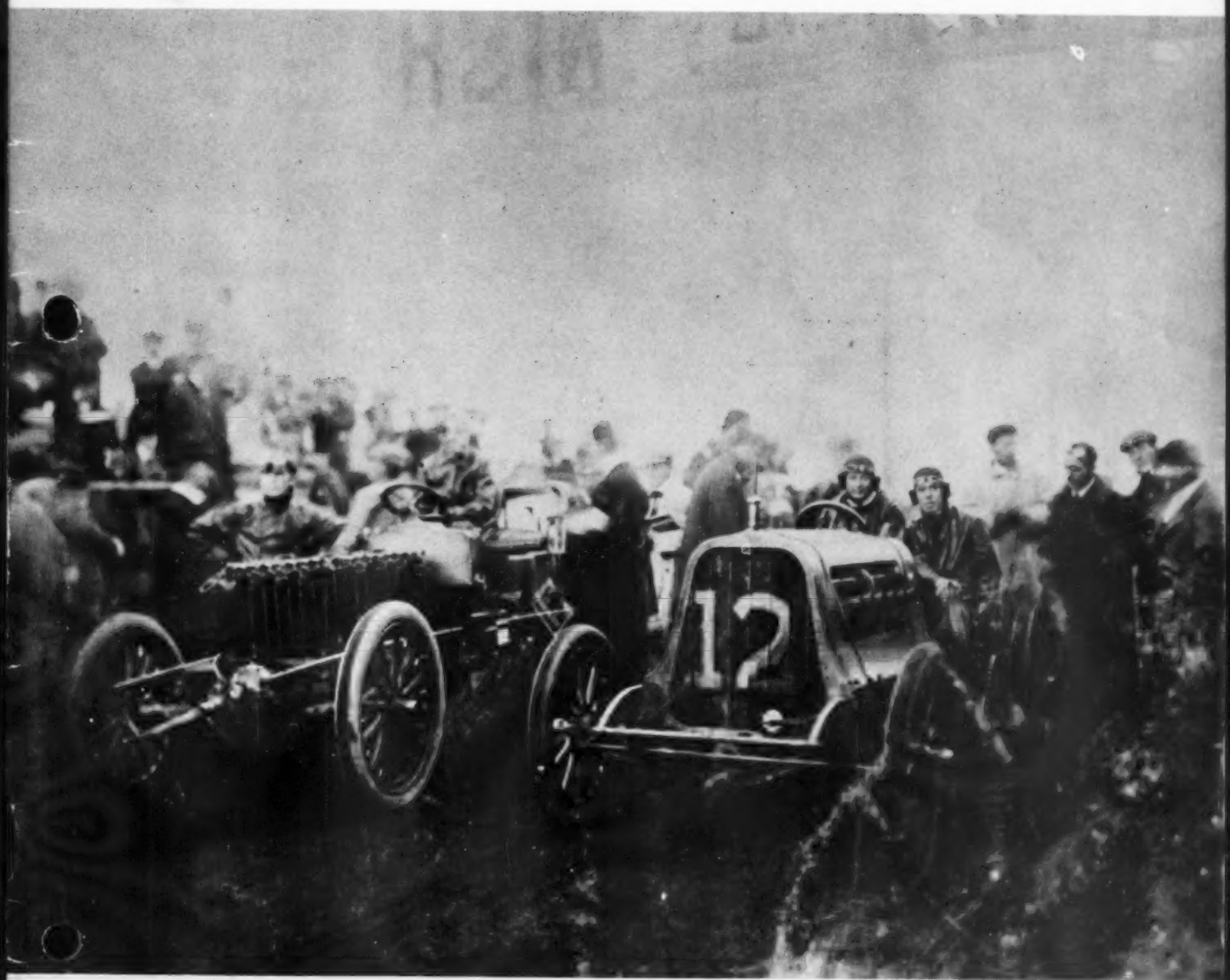
AIR COOLED NEWS



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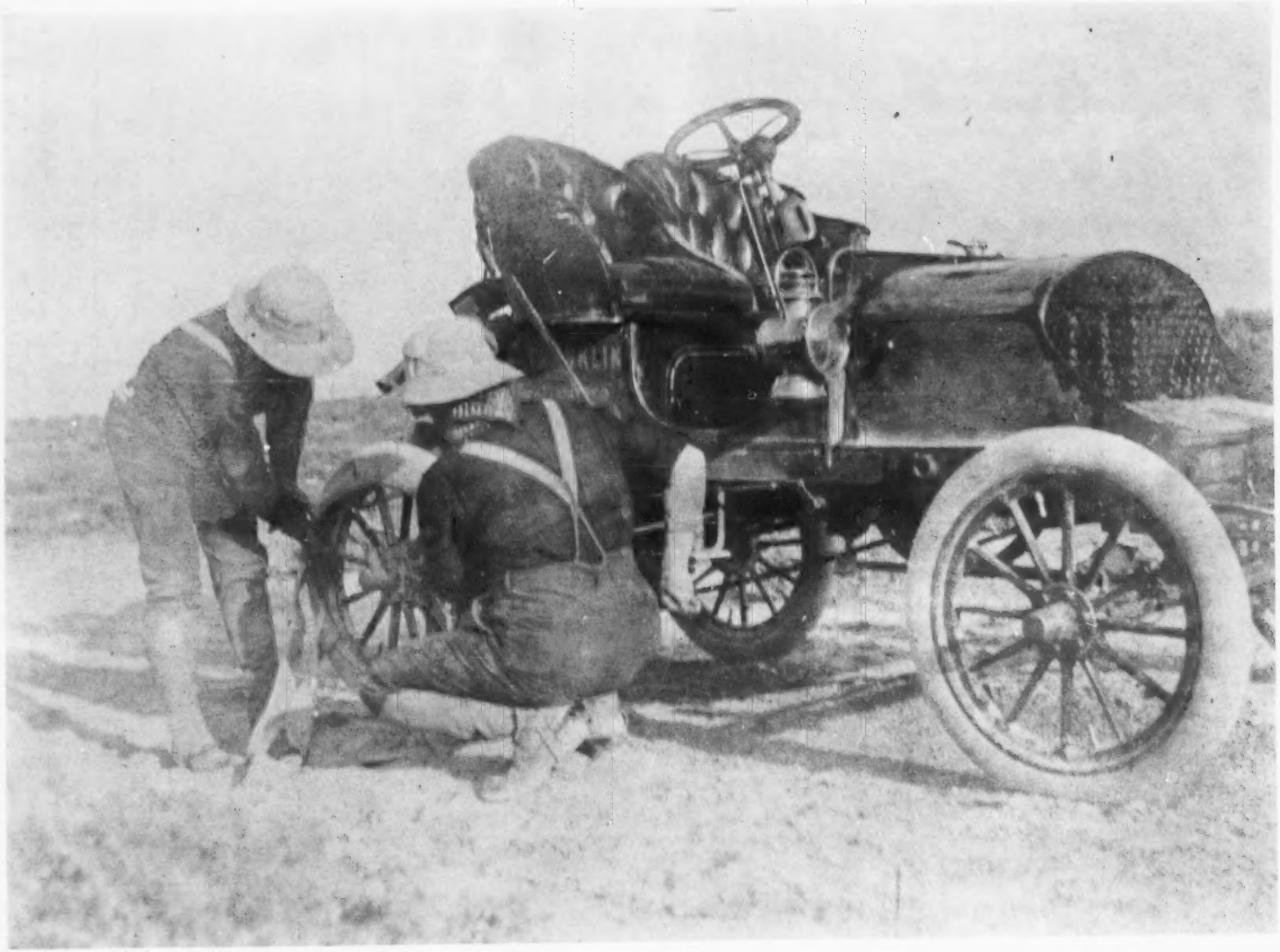

VOL. IX No. 1

AIR COOLED NEWS

June 1961

PUBLICATION OF

THE H. H. FRANKLIN CLUB

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Once again Carl Doman has come through with a fine story. This time he brings out some previously unprinted history of the V-12 development.

Carl, in his reminiscenses of the period while the Twelve was under consideration, brings us much intimate knowledge of the many problems, financial, technical and, of even more important bearing, the hopeless struggle against the uninspired, even obstructionist, attitude of the unloved bank manager with whom the company was unfortunately saddled at that time. There is not too much point at this late date in mooning over "what might have been," but Carl's story of the car as he and the real Franklin people envisioned it does give room for speculation on how Franklin history could have been changed if the attitude of the banks and the city had been wiser. Perhaps it is just as well. The Franklin would not have survived within the pattern of our dreams. At the very best its name might have gone on for awhile gracing an unworthy prostitute to finally end whimpering and unhonored as so recently was the fate of a once proud and worthy contemporary. At least the Franklin was shot down during a valiant struggle.

The Club is now ending its first decade. We recall talking to George Boyer about a year before the club was actually organized on the idea that someone should start gathering in Franklin history and getting it down before it was too late. Of course we were thinking in the usual terms, "someone should write a book," we did not have any idea of a club. We soon learned that George was quite interested, in fact both he and Hubbard, then unknown to each other, had each placed advertisements in ANTIQUE AUTOMOBILE, strangely alike, seeking historical information on Franklin. Then with customary dooleasness we forgot the whole thing, someone was probably going to do something, so why bother. Not too long afterward we received the first copy of AIR COOLED NEWS, put out by Tom Hubbard and financed jointly with Cliff Boram. We sat up and began to take notice. Sometime after this proposals were made to place the club on a more usual basis and things were on their way.

With the reorganization of the Club our son became its president. We became deeply hooked, helped organize the first Trek, took on the business of membership and have been stuck with something or other ever since. We recall with certain amusement that at the time of reorganization, though it was called The H. H. Franklin Club from the first, we had almost sixty members. a certain well known member who had carried the club almost singlehanded said, "If we can ever reach a firm 150 members it will be easy sailing." In less than six more months we had passed 200! The club has grown well in membership through the years but none of us expect an organization as restricted in interests as we are to become truly large. Perhaps the years will prove that remark as much of an understatement as that which just went before.

So we are ten years old and our Trek this year is our Eighth. The Trek too has grown, though not quite as rapidly as our membership, but probably our Trek brings as large a percentage of our members as does any other affair held elsewhere by other clubs. Despite our far flung membership the Trek brings in around twenty percent of all our people. The same gentleman who hopefully looked forward to "a firm one hundred and fifty," urged everyone to come to the First Trek because, "this is not likely to become an annual affair."

Only the most rabid flag waving types would contend that America was not behind Europe in the earlier days of the automobile. It was probably nowhere more evident than in racing circles. The Americans brought some weird and wonderful contraptions to the tracks and roads while their foreign brothers had already begun to settle down to accepted types of racing cars. Possibly no one, other than Walter Christie, brought forth any more "offbeat" racing cars than Franklin.

Walter Winchester, a club member, was the pilot for most of these outlandish contraptions. Most of us are at least slightly familiar with the well known Franklin straight eight that was a contender for the American team in the 1905 Vanderbilt, but the rest of these beasties are surely unknown to many of us. Mr. Winchester has made available all the pictures used in this story and has either written or confirmed whatever we are printing about them.

Many of us met Mr. Winchester at last year's Trek and enjoyed his very brief remarks about some of his experiences. Mr. Winchester expects to be with us again this year.

Our cover picture this time shows Walter and the Franklin at the start of the Vanderbilt Elimination trials. The Pope Toledo at his left is being driven by Lytle, the companion Pope with Dingley up was already several minutes on its way when the picture was taken. More about the race in the story.

The picture to the left from the Carris Collection shows the 1904 Transcontinental car resting a bit on the desert while Carris, to the left, and Whitman, sitting on his heels, collaborate on the chore of changing a tube. Might seem like a minor disaster to today's driver but it really wasn't much with a little twenty eight by three.

ROBERT P. RYAN

We have just learned that member Robert P. Ryan passed away during the past winter. He will be missed by many of us who learned to know him during several of the Treks.

THAT VEE TWELVE

Carl Doman recalls the struggle against odds to bring the 12 to life

RECALLING facts and figures of a period thirty years in the past is always a difficult job. I am in that position as I begin a story on the development of the Franklin V-12. Unfortunately, I have very little engineering data but I do recall certain facts which I hope will offset other missing material.

In the late summer of 1927, Ed Marks one afternoon started out to locate me. He found me in the "dog house" attempting to solve the mystery of a peculiar operation encountered with a Series 13 engine in an attempted endurance test. Ed asked about my roblem, but I could see he had something else on his mind, so I waited. He coughed, hesitated, then said, "Carl, you are attempting to do more than it is possible for you to do. So, we have decided to bring in an engineer who will know nothing about the past Franklin engineering history. Possibly his ignorance of the past will aid him in coming up with a radical change in Aircooled engine design." Ed waited for me to speak. Words just wouldn't come, because I was hurt. I had many radical ideas of my own for an air cooled engine, but was held back primarily because of other attempts in the past to depart from Franklin fundamentals. I simply said, "Mr. Marks, I am hurt, but I will help this new man in every possible way." Ed thanked me then said the engineer was Glenn Shoemaker, Research Engineer at McCook Field, Dayton, Ohio. There Mr. Shoemaker had done very basic work on ignition systems, but more important on cylinder cooling and valve porting. Ed, in concluding this conversation, assured me that I would continue as Experimental Engineer in charge of Laboratories and Development for engines in production, or to be released for production during the next two years. This meant that my group would carry on the laboratory work for Mr. Shoemaker as he would have no personnel assisting him.

Shortly Mr. Shoemaker moved his family to Syracuse. He located near us, so shortly the Shoemakers and Domans were having some great times together. Glenn Shoemaker was about ten years older than I, so I looked up to him, and, in fact, learned much. But, most important, I learned that an open mind is an absolute necessity in engineering. There had been too much of "We tried that," "You can't do that," "It won't work," at Franklin.

Glenn had many conferences with management and with us lesser lights. He mentioned in passing one morning that he planned to develop a new 6 cylinder engine incorporating cast iron cylinders and cross cooling. Quite naturally this statement initiated some violent arguments. John Burns remarked, "I have been trying to sell a cross cooling program for years, but you can't cool such an engine with cast iron fins. At least you will need copper fins." Glenn attempted to sell us on his program. He had data collected at McCook Field, but John Burns, experimental engineer, Jack Flannery, laboratory engineer, and I just couldn't be sold.

In spite of our arguments, Glenn proceeded with the design of the cylinder, the induction system and the cooling system. The scheduled date to test the engine was November 20, 1927.

Glenn Shoemaker's active mind was also busy on a radical departure — a V-12 cylinder high performance engine. John Rogers, the Senior Engine Designer, was assigned to do the layout work. Quite naturally I found it "necessary" to often visit the northwest corner of the engineering drafting room where John was located.

In 1927 all indications pointed to an era of larger motor cars with more power, greater performance, greater comfort, accompanied by greater efficiency. It was reasoned that a V-12 cylinder air cooled engine had the brightest future. So, it was decided to design this new engine with no thought of using parts from the 6-cylinder 272 cubic inch engine. It was concluded, however, that the 12-cylinder engine must have great latitude for future development, so the following dimensions were tentatively selected:—

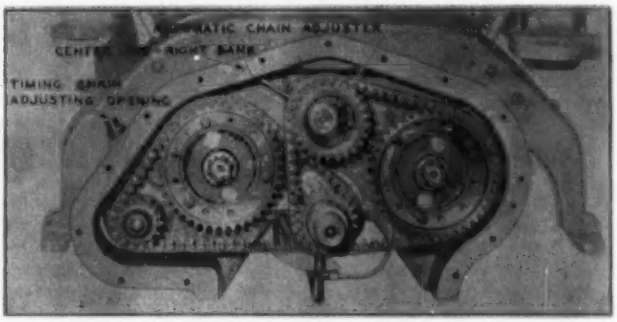
Engine	Bore	Stroke	Piston Displacement	Compression Ratio
A	3"	4"	340	5.5
B	3¼"	4"	398	5.3
C	3½"	4¾"	544	5.3

It was decided to build engine "B" first because it appeared to fulfill the demand, if economic conditions warranted putting it into production.

Engine "A" could be developed rapidly (so we thought), since only a new cylinder assembly incorporating a smaller bore would be required. Our experience, however, two years later with the smaller cylinder was indeed surprising. Air flow through the cylinder ports seemed to defy every rule in the book.

Engine "C" would have incorporated a cylinder head with many of the features of that being developed by Glenn Shoemaker for the 6-cylinder engine. However, this engine never was developed because the Depression of 1929 resulted in the best of plans being sidetracked or, as so often happened, just plain cancelled.

As John Rogers progressed with his design studies, it became apparent that a V-12 engine was not simple. Try as John did, he could not escape the need for two camshafts, each located on the outer edge of the crankcase. It is difficult to explain this problem intelligently. It was primarily a problem of space in the "V." There was no room for twenty-four valve lifters and twenty-four push rods.



The twin camshafts with their chains and adjusting devices are rather clearly shown in this picture from the manual

The two camshafts involved a very complicated front end, or camshaft drives. Two Link Belt chains were used, the one on the right also drove the generator and by shifting the generator, the proper chain tension was obtained. The left camshaft drive incorporated a Link Belt automatic adjuster, an eccentric mounted idler with a spring to rotate it the necessary amount. Complicated as this may sound, the camshaft drives were absolutely satisfactory. However, resetting the camshaft was not a simple job, it required a good mechanic who kept his mind on his work every minute.

The crankshaft in principle was a conventional 6-cylinder, 7 bearing design, except on each crankpin was two connecting rods, side by side. The shaft had extremely large bearings. In addition, it had twelve counterweights. We designated it as a fully counterweighted type. There simply was no space for additional balancers.

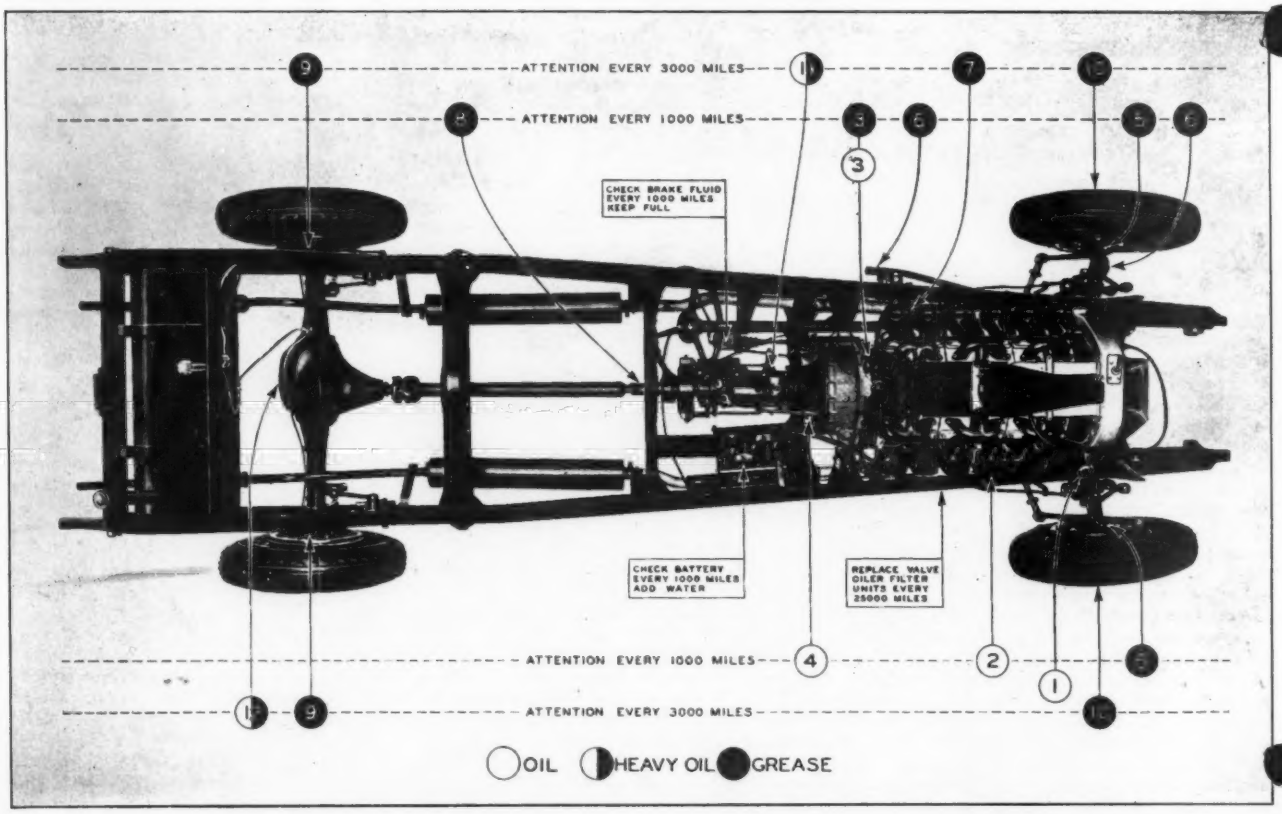
The crankcase was cast by Oberdorfer Foundries in Syracuse in an aluminum alloy. The casting was a beauty, strong, well proportioned and fully capable of handling the 544 cubic inch engine without major changes in the pattern equipment or in the production tooling.

With production relatively small, Franklin was constantly forced to design for the future. A future not requiring huge sums for changes in patterns, tooling and production machinery. The cylinder centers, or the distance occupied by each cylinder, was 5 inches. Franklin had introduced the Series 10A in 1922 and continued this spacing in all its engines until the last car was produced in 1935.

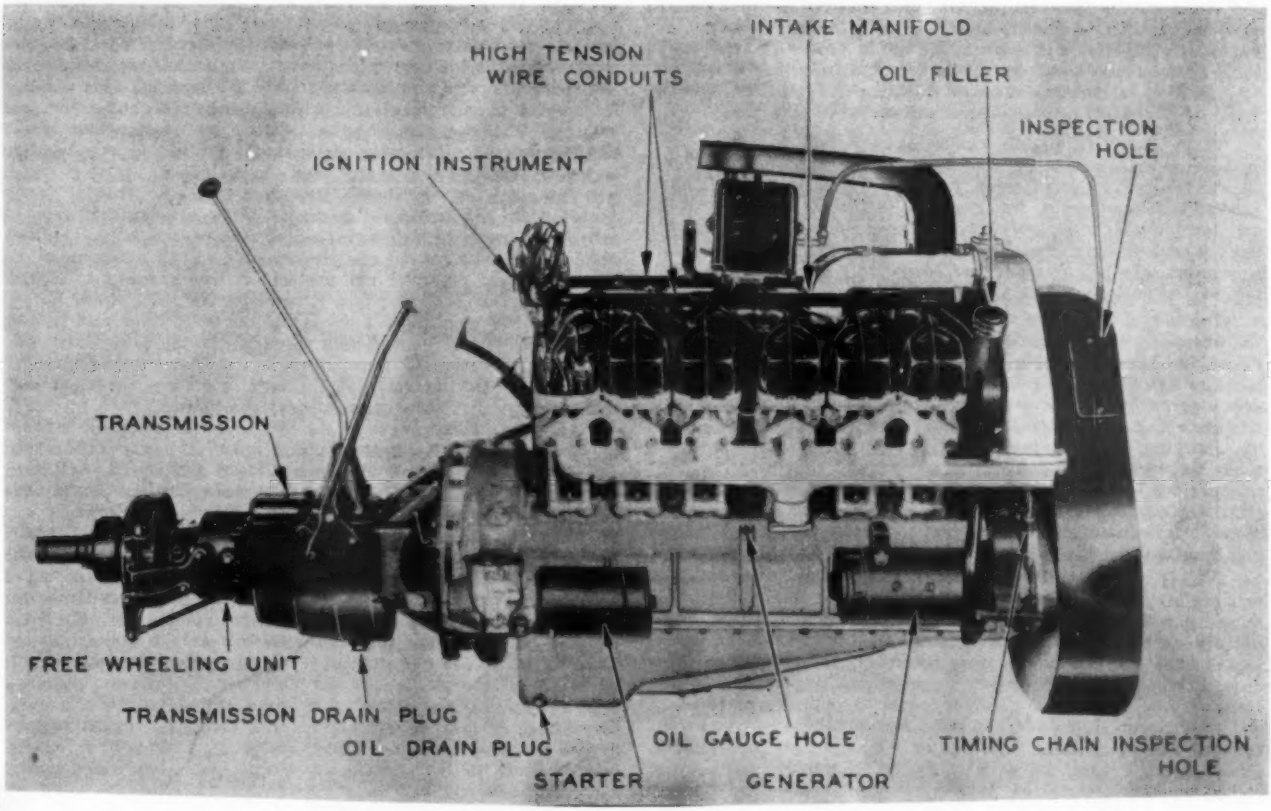
The cylinder assembly incorporated a cast aluminum head bolted to a cast iron cylinder barrel. Each head had a cooling surface of 540 square inches and each cylinder barrel only 270 square inches. Since 73 per cent (with 5.3 compression ratio) of the heat to be dissipated passes off through the cylinder head fins and 27 per cent through the barrel fins, most attention for improved cooling was concentrated on the design of the cylinder head.

After the engine was under development, attempts to use cylinder heads of cast iron were unsuccessful unless the power output was reduced fifteen per cent. With the cast iron heads, the engine detonated very badly, due no doubt to hot spots in the combustion chamber and extremely hot exhaust valves.

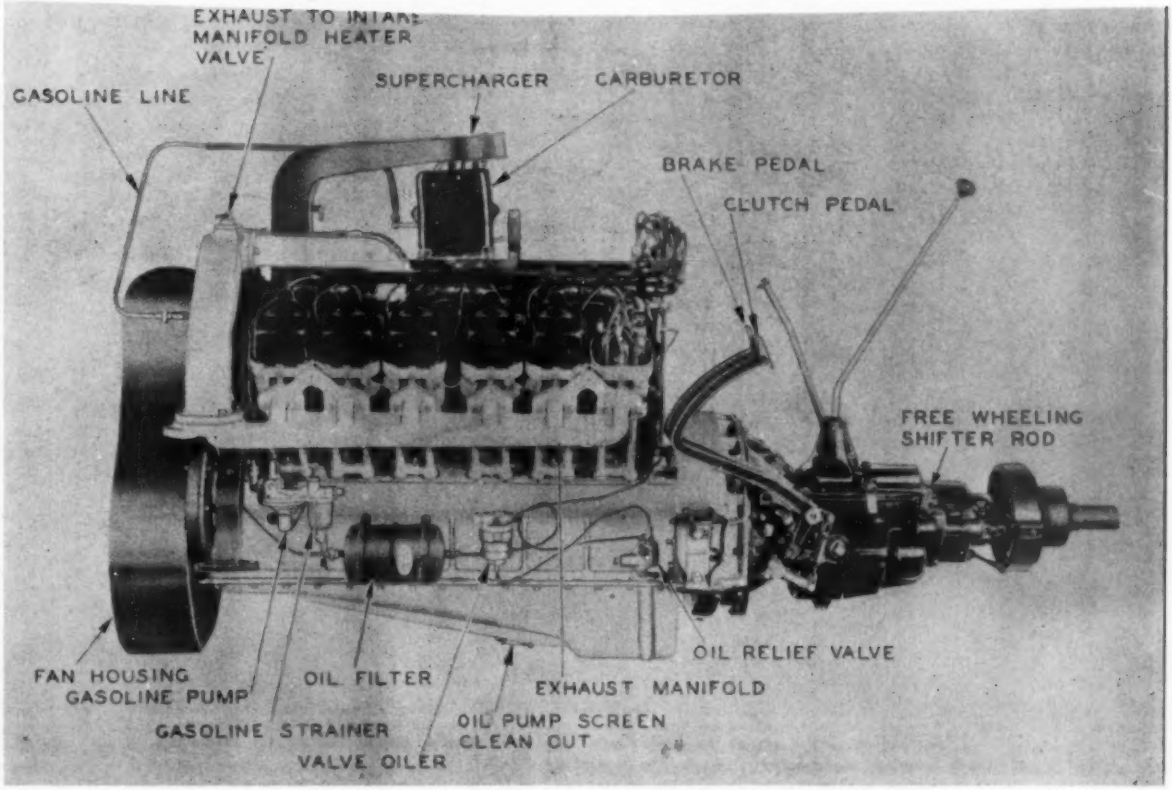
Of course, an aircooled engine requires a definite supply of cooling air. A centrifugal fan—14 inches in diameter, 3½ inches wide with 62 blades was initially specified. The fan was attached to the front end of the crankshaft, but it was mounted on a flexible composition rubber hub. This design had been developed by the old master, John Burns, in 1924. Actually, the fan itself was the inertia member of a torsional vibration absorber. Without the rubber hub, a terrific booming noise was present, at certain speeds—38-40 miles per hour, 48-50 miles per hour, and even at higher speeds.



This lubrication chart from the manual will give a good idea of the general layout of components in the production car. The 6000 pound weight of the final car is quite evident here.



These "off and near" sides of the engine are self explanatory



The air from the cooling fan was collected by a scroll type of housing, then directed down the "V" passage between the banks of cylinders. Distributing the air in proper proportions to each cylinder for equal operating temperatures was a difficult job. In fact, in 1960 this remains a difficult task in the development of any multi-cylinder direct air cooled engine.

When the V-12 engine was being designed the down-draft carburetor was just being developed by the manufacturers. So, Glenn Shoemaker was forced to specify a dual up-draft unit. Foolishly the carburetor was mounted in the air stream with the air housing extending over it. We later found that when the engine back-fired, the cooling air accelerated a vicious fire. So a redesign was begun, using the down-draft Stromberg carburetor located entirely out of the air blast.

The induction system utilized two 6-cylinder Swan manifolds. Clarence Kirkham, Chief Engineer of the Swan Company, spent days with John Rogers in the manifold design study. Many designs of the "hot spot" were made, but none satisfied as there was necessarily just too much cast iron to heat. It heated slowly and once heated retained its excessive heat when it wasn't needed. Looking back, it is regretable that an attempt was not made to circulate the lubricating oil around the manifold. The mixture would have been heated and the oil cooled. In 1960 the trend is definitely toward using the coolant to heat the mixture in the intake manifold, but we must remember the V-12 Franklin was designed thirty-three years ago.

But, to go back thirty-three years ago when the first V-12 was put on the dynamometer. We expected that the engine would start immediately, but it did not. It would fire on either bank, but not on both together. Eventually we found that the markings on the distributor cap were incorrect, but only after three days of frustration. Possibly the frustration was caused by the frequent visits of the top brass to the dynamometer room. I was only twenty-eight years old and was always upset when the General Manager, Ralph Murphy, or National Service Manager, Frank Leyerle paid me a friendly visit. But, eventually the engine operated perfectly, at least it developed approximately 120 B.H.P. at 3,200 R.P.M.

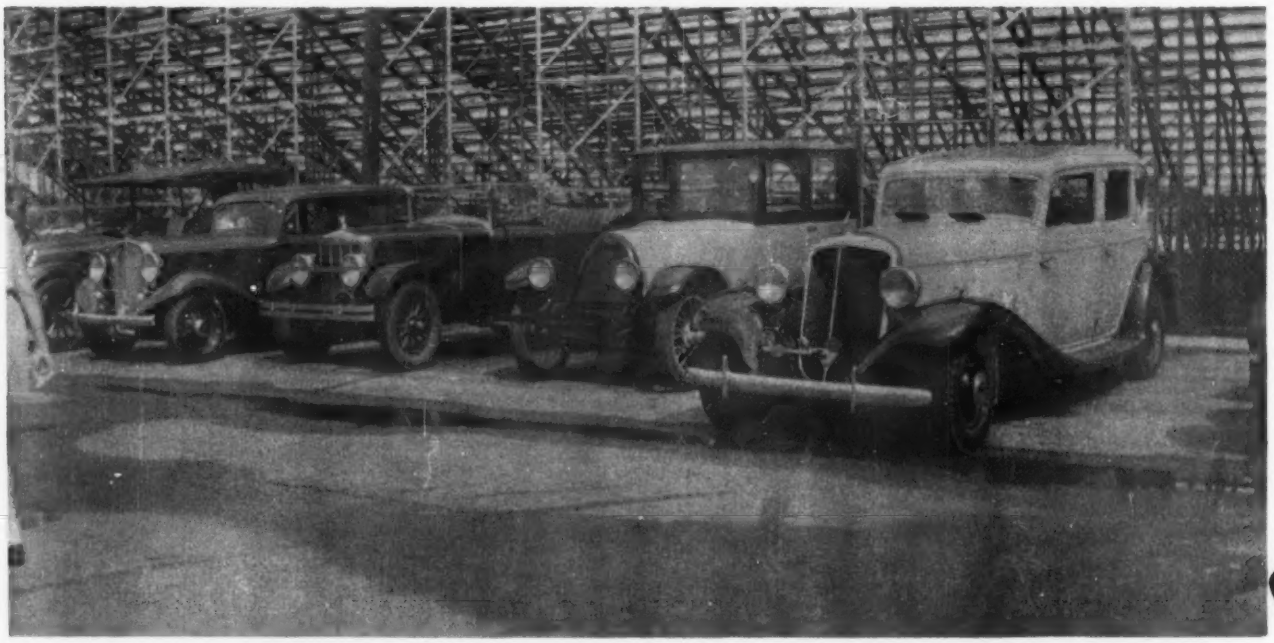
After we had the air distribution to each cylinder reasonably equal, it was decided to install the first engine in a Series 137 car. It seemed that every "near executive" was waiting for a ride. Once they rode, they were so enthused that even a greater future was predicted for Franklin.

After the road tests showed good performance, it was decided to build five more sample engines — one for dynamometer use, two for wear tests and two for road testing. But these engines were to incorporate corrections for plain mistakes. As an example, the spark plugs on the left bank were to the rear. This resulted in the plug wrench interfering with the dash. Of course, the rear offset of the left cylinder bank used up the space which would have permitted spark plug removal. So the spark plug location was reversed, and the trouble was eliminated.

The road tests disclosed one other problem. This difficulty centered in the induction system. When accelerating from 5 miles per hour, full throttle, a stumble or misfiring resulted. John Burns insisted that the cross-section of the intake manifold was too large. So, over my protests it was reduced to 1 inch square section. It helped but, it reduced the peak power output seriously. We tried more heat on the hot spot. This also helped, but took its toll in reduced high speed power. So John Burns and Carl Doman were in a constant argument. John wanted smooth acceleration, Doman resented losing power since strong advertisements were to be written around the power.

An engine as advanced as the V-12 required a terrific amount of development. The dynamometer work of power calibrating, fan development, spark curves, etc. was assigned to a young Yale graduate, Robert Merithew while the endurance testing was handled by Jack Flannery. The most interesting program was the development of the cooling fan. The engine when originally designed used a 14-inch diameter by 3½ forward pitch, 56 blade fan. It delivered sufficient cooling air, but absorbed in doing it approximately 30 horsepower at 3,000 R.P.M. We often hoped for a fan that need not absorb more than 10 horsepower. So, when we had developed the fan that absorbed only 6 horsepower at 3,000 R.P.M., it was quite natural that our enthusiasm was directed to Ralph Murphy and Chief Engineer, Ed Marks. When a patent was granted to me, this same enthusiasm was greatly magnified. At last we had proven that direct air cooled engines absorb less power and need less cooling air than a liquid-cooled power plant. In 1961, I still argue this with the "water cooled experts of Detroit."

One major problem encountered was excessive oil temperatures. For some time we used a temperature gauge in the pan, but one day Jack Flannery inserted a thermocouple in the oil passage to a main bearing and found temperatures of 340° F. We knew that the life of the engine would be short so we concluded that an oil cooler was necessary, absolutely necessary.



The William Miller car at the 1955 Trek. This indicates the massive size of the production Series Seventeen as compared to some earlier examples

In conducting our road tests we often used the highway running through Lockport, New York. On one of these trips we stopped at the Harrison Radiator plant of General Motors and discussed our problem. An experimental cooler was made for us and one installed in the "V" between the two banks of cylinders and utilized as an air deflector.

Ralph Murphy who followed our development work very closely, criticized the location of the cooler. He claimed that the pressure would be the same front and rear, so no air would flow through the cooler fins to cool the oil. Once we showed Mr. Murphy the test results he was sold that the cooler did a good job. In fact, it reduced the temperatures of the oil flowing to the bearings by nearly 100° F.

As the development work proceeded satisfactorily, more and more confidence was evident. One car was turned over to Cannon Ball Baker and he immediately began to break speed records throughout the United States. Jack Flannery accompanied Ben Jerome to the West Coast, why we never could quite decide, except as Jack Flannery often said, "All I guess is that we went to California to get Ben Jerome's laundry." He had been living out there.

While Ed Marks and his gang were enthused with the 12-cylinder Franklin car, top management could come to no decision regarding manufacturing. Possibly the Depression which hit in 1929 might have been responsible. However, Franklin seemed to hold back from retrenchment until 1932, but, of course, in 1933 Franklin was well aware of the Depression. Franklin was in serious financial trouble.

In 1930 Mr. Franklin induced Fred Haynes, former President of Dodge Brothers, to come into the organization and run the business. We were all encouraged as we had so much faith in Mr. Haynes. He had been an executive at Franklin prior to his joining Dodge and left behind him many friends.

Mr. Haynes first thing gathered us together and outlined his desires to correct the troubles in the Series 15 6-cylinder car. He made everything look simple. I recall one meeting where I told him that I would lick the problems if I had a little money to spend. Mr. Haynes asked me what I had in mind. I told him. He simply said, "Go ahead." The Series 16 Franklin was a near perfect automobile. It was practically free of troubles.

It seemed just when things were shaping around that we were shocked to learn that Mr. Haynes had resigned and had gone back to Detroit. Why? We never could learn, but we were all dejected.

At the 1932 New York Automobile Show we introduced the Franklin 12 cylinder car. We exhibited a limousine and a four door sedan. The bodies on these cars were exactly the same as were installed on the Series 16 1932 6 cylinder car. These were originally designed by Ray Dietrich for the Series 15 in 1931.

These 12 cylinder cars had a 137" wheel base, or 5" longer than the Series 16 car. All of the increased length was ahead of the dashboard.

The chassis construction was very similar to the Series 16; that is, flexible steel frame, tubular front axle and light weight Franklin rear axle. The difference in weight between the 12 cylinder car and the Series 16 was approximately 500 lbs. In other words, the car weighed approximately 4200 lbs.

This picture is from the collection of John Burns who appears on the extreme left. It was taken at Miami Beach in 1931 during the testing of the original V-12. This is, of course, the 137" wheelbase car. It was of Franklin construction throughout and weighed in at 4200 pounds as against the three ton monster that evolved from Mr. McEwen's orders.

These tests were conducted by a team that included Cannon Ball Baker, who is sitting on the bumper. The only other person definitely identified is the gentleman in the cap on the right. This is the redoubtable George Scheicher, one of Bake's favorite riding mechanics. George had a classical command of invective and his probable remarks on the McEwen car should have been something to hear!

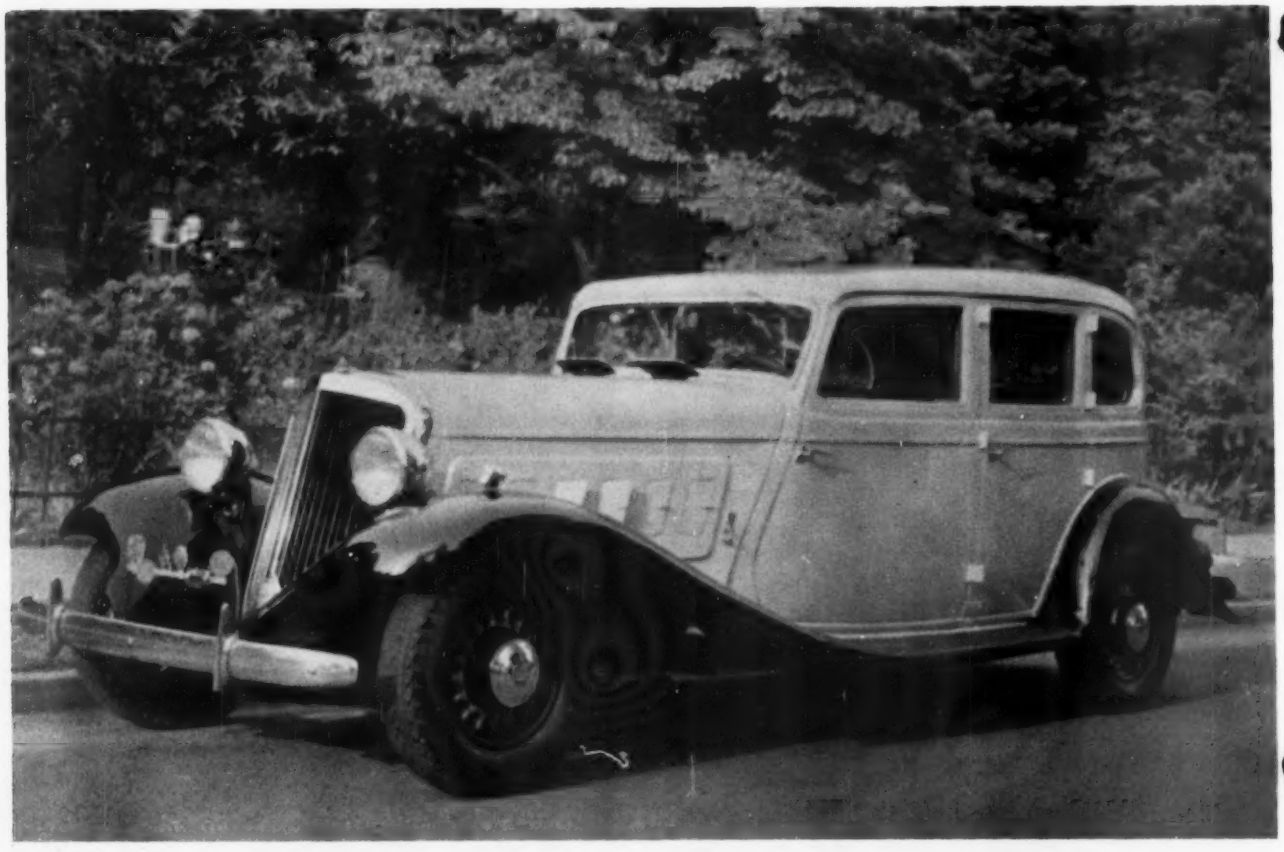
In the fall of 1931, the five banks from whom Franklin had borrowed approximately three million dollars decided to send in Mr. McEwen, a specialist in management of sick companies, to run the Franklin operation. We was known as an "undertaker" as he specialized in burying sick companies. Mr. McEwen, after many stern lectures, attempted to assure us that he planned to save the company, and not to liquidate it. We doubted this, but early in 1932 he issued orders to redesign the 12-cylinder car as follows:—

1. Use 398 inch engine
2. Use 144" wheel base car
3. Use semi-elliptic springs, front and rear
4. Use Columbia front and rear axles
5. Use Warner three-speed transmission
6. Use entirely new body to be manufactured at Franklin's plant

FRANKLIN 12-CYLINDER

SPECIFICATIONS

Wheel Base	144". Tread 61".
Turning Radius	26 ft.
Chassis Lubrication	Zerk Pressure system.
Wiring	Single wire system. Positive battery terminal grounded on sill.
Front Axle	Drop forged steel I-beam section with Timken roller wheel bearings. Axle tilt, 2° from horizontal. Wheel camber, 2°. Toe-in, 0 to 1/8". Yoke pins are anchored in axle tube ends and have burnished bronze bushings in yokes and ball thrust bearings under spindles.
Rear Axle	Semi-floating type with Timken bearings used throughout. Large size roller bearing in each end of axle housing to carry radial load. Bearing retainers welded to axle housing. Differential is of the bevel type with spiral bevel ring gear and pinion of nickel steel. Ring gear and pinion have screw adjustments. Gear reductions: 4.45 to 1 and 4.73 to 1.
Wheels	Wheels are 17" x 4.19" with drop center rims. Tires are 17" x 7.50" 6-ply heavy duty Balloon.
Springs	Semi-elliptic, 40" x 2¼" front and 60" x 2½" rear. Fafnir ball bearing shackles. Anti-shimmy trunnion block on left front spring.
Brakes	Service: 4-wheel hydraulic with two internal expanding shoes on 15" diameter by 2¼" face pressed steel drum. Drums are centrifuse steel with cast iron linings. Controlled by right foot pedal which operates master cylinder. Reservoir on master cylinder. Hand: Double-acting contracting band on brake drum at rear of transmission. Controlled by hand lever.



An excellent example of the V-12 in four door sedan style. This car belongs to member William H. Miller of New York. It has been present at one or more Treks and shows little sign of the rough car that he originally unearthed

Steering — Non-reversible cam and lever. Ratio, 20 to 1. Roller bearings on cam stud, ball bearings at ends of worm gear.

Engine — 12-cylinder, 3¼" bore by 4" stroke.

Compression Ratio — 5.1 to 1.

Horsepower Rating — S. A. E. rated H.P., 50.7. Developed H.P., 150 at 3100 revolutions.

Piston Displacement — 398 cu. in. (6.52 liters).

Cooling — Direct application of air currents to each cylinder from a 15" turbine fan having a capacity of 5,720 cubic feet of air per minute at 60 m.p.h. Under hood temperature regulated by thermostatically controlled hood front shutter.

Oiling — Pressure feed from gear pump through oil temperature regulator to header supplying main and connecting rod bearings and wrist pins, valve oiler and timing chains. Cylinders and pistons receive a stream of oil from a metered outlet in the connecting rods. Oil pump relief valve set to read 45 pounds maximum, with oil at room temperature (70°F). Oil pressure indicator on instrument panel shows oil pressure.

Valves are lubricated by an automatic valve oiler. Engine oil is fed to the valve oiler from the oil pump. The oiler filters the oil thoroughly and distributes it to the valves and valve mechanism.

Oil Reservoir — Capacity—ten quarts.

Oil filter removes any sediment or foreign matter from the oil.

The crankcase ventilator, supplying a stream of air to the oil reservoir, prevents contamination of the lubricating oil. Flow of air regulated by a thermostatic valve. Aluminum plate on bottom of oil reservoir permits cleaning reservoir and oil pump screen.

Crankcase — Cast aluminum base and reservoir

Crankshaft — Heat treated carbon steel crankshaft has seven steel backed main bearings. Sizes: No. 1, 2 5/16" x 2⅝"; Nos. 2, 3, 5 and 6, 2 31/32" x 2⅝"; No. 4, 1 31/32" x 2⅝" and No. 7, 2 31/32" x 2⅝".

Crank pins are 1⅛" x 2⅜". Main bearings have .0015" clearance and connecting rod bearings .002".

The shaft is fully counterbalanced and is in both static and dynamic balance.

Crankshaft end thrust is taken on a hardened steel washer at front. End play .005" to .008".

Camshafts — The camshafts have cams forged integral with the shafts and are supported by die cast bearings line reamed. The camshaft drives the ignition instrument, oil pump, and gasoline pump.

Camshaft settings to be from 2¼" x 2¾" after top dead centers measured at fan rim, with No. 1 intake valve, right bank, and No. 6 intake valve, left bank, set at .031".

Left camshaft has five bearings numbered 1, 2, 3, 4 and 5. Right camshaft four bearings numbered 1, 2, 3 and 5. Sizes right and left are No. 1, 3¼" x 1¼"; No. 2, 1⅜" x 1 29/32"; No. 3, 1⅜" x 1 49/64"; No 4 (left), 1⅜" x 1¾" and No. 5, 1¼" x 1¼".

Connecting Rods — Carbon steel I-beam type rifle bored oil hole to wrist pins, bronze bearing in wrist pin ends and with steel backed bearings at crankshaft ends.

Wrist Pins — The wrist pins, ⅞" x 1 7/32", are full floating with shrink fit in piston bosses casehardened and chromium plated and have reinforced centers. Full floating in connecting rods.

Pistons — Aluminum, Invar-Strut, two ⅛" compression, two 5/32" special oil control rings. Ring gap, 013" to .018" for compression rings and .013" to .021" for the oil control rings. Piston clearance .0025".

Pistons weighed and matched. Weights, clearances, and sizes stamped on piston heads.

Cylinders — Cast individually of chrome nickel iron; removable head of cast aluminum with ni-resist insert valve seats and bronze spark plug bushing; cooling flanges cast horizontally.

Spark Plugs — 18 m m. standard Champion. Spark plug gaps set .025".

Valves — In head, enclosed, Silchrome #1 exhaust. Lubricated automatically. Tappet clearance with engine hot, suction .007" and exhaust .007".

Diameter suction valve, 1 13/16"; exhaust valve 1⅝".

Double springs used on each valve, set 48 to 52 pounds with valves closed.

Spring weights adjustable by means of shims

Walking beams and rocker arms are mounted in cast iron case on top of cylinders.

Timing Chains — Silent chains drive camshafts and generator.

Right chain adjustable by means of special generator mounting and inspection hole. Left chain has automatic adjustment.

Clutch — Two dry plate type with special design of vibration absorbing center. Clutch trunnion has ball bearing. Clutch operated by left foot pedal which should have ½" free motion.

Fan — 15" turbine type fan keyed directly to crankshaft.

Carburetor — Specially down draught dual barrel fixed jet with spring loaded choke Stromberg EE2. It is equipped with a supercharger incorporating a highly efficient flame arresting air cleaner. Intake manifold warmed by exhaust gases controlled by shut-off at instrument panel.

Throttle Opener — Delco-Remy solenoid #1370.

Ignition — Ignition switch on instrument panel. Delco Remy closed circuit double breaker type, distributor 667-A, automatic advance with modified control for full load low speed operation. Two Delco Remy Coils 532-C.

Ignition timing set so that spark will occur when each o mark in fan rim designating C/L of right and left cylinder banks, is ¾" ahead of right cylinder bank center mark in fan housing.

Generator — Delco Remy No. 931-G, 6-volt two-pole machine with third brush adjustment. Generator armature mounted on ball bearing at the rear and special journal at the front.

Generator has thermostatic current control.

Starter — Delco Remy #545, 6-volt six-pole machine direct drive to Bendix Drive.

Remote Starter Control	Delco Remy $120 remote control starting operating solenoid.
Transmission Free Wheeling	Selective type, three speeds forward and one reverse. Syncro-mesh device between high and second. Roller clutch free-wheeling device built into rear of transmission case.
Propeller Shaft	Tubular with two enclosed all metal, oil tight universal joints.
Frame	Steel straight channel section with box shaped reinforcement.
Lighting	Single contact 6-volt system. Hall Depress Beam headlights and lenses; double filament bulbs. Control on steering wheel. Lighting circuit protected by a current limit relay. Cigar lighter circuits protected by fuses.
Gasoline System	28-gallon tank at rear. Gasoline feed pump with filter. Gasoline pump is driven from camshaft and furnishes a uniform supply of gasoline, adequate for all operating conditions of the engine.
Battery	6-volt extra large capacity Williard, with threaded rubber separators. Positive terminal grounded. Located under right floor board.
Horns	Twin high frequency type—matched pair with relay.

The first car was built in production and was finished in March, 1932. I was selected to captain a West Coast team, the other member of which was John Burns. In thirteen days we had driven to Los Angeles and return, had had countless mechanical problems to handle, had many telegrams, had many reports, and many phone calls to make daily. Yet, when we arrived home Mr. McEwen accused John Burns and me of joy-riding.

This account of the Los Angeles and return road test of the Series Seventeen is from the original diary kept by Mr. Doman. It was originally printed in ACN of August 1954 but seems to be a sort of "must" supplement to his current story.

* * * *

During the latter part of March 1932, Syracuse was swept with an enormous snow storm. Traffic was blocked; streets were closed; people could not get to work. Nevertheless, Mr. McEwen, the General Manager of the Franklin Automobile Co., insisted that we leave with the first 1933 model just as soon as it was completed. What men could arrive for work, worked 24 and 36 hours without rest in order to complete this first Franklin 12. It was turned over to John Burns, Experimental Engineer, and myself late in the afternoon of March 24th, 1932. We attempted to sell Mr. McEwen on permitting us to leave the following morning; however, he insisted that we leave immediately. Since he operated by the use of the big stick, we realized that arguments would be out of place. The events of this trip are outlined as follows:

March 24: Left Syracuse at 3:30 P. M. Drove to Erie, Pa., where we followed instructions and wired the factory of all troubles encountered, which, of course, were very few because we were only 200 miles from Syracuse. Nevertheless, one aggravating condition was found—the shape of the front post of the body deflected air in such a manner that a high screaming noise was heard similar to that of a siren. (233 miles)

March 25: Stopped in Cleveland at the Columbia Axle Co., where an attempt was made to correct an error in the steering geometry of the front axle. The Columbia Axle Co. built the front axle for this car. It was found that in high speed driving, with sudden application of the brakes, the car would dive left or right with great severity. If care was not taken, the car would many times have turned over. The work done by the Columbia Axle Co. failed to correct the trouble. We went on to Cincinnati where we stayed all night. (353 miles)

March 26: Arrived at Jackson, Tenn. Brakes and steering gave considerable trouble which made it necessary to be on guard at all times; otherwise car would take to the ditch. (512 miles)

March 27: Easter Sunday. John Burns arose early and went to Easter Mass. I sent Easter telegram to Christine. Drove on to Texarkana, Texas, through dusty country and then into a heavy rain storm where rain came into car through badly fitted doors. Advised factory by telegram that door construction must be changed. Also found that the front steering upper tie rod hit the oil pan, with the result that the steering geometry was changed. Springs also bottomed on rough roads. Arrived Texarkana late afternoon. (457 miles)

March 28: The telegram sent previous evening to factory apparently was quite disturbing, since on arrival at Big Spring, Texas, telegram advised us to phone Mr. Marks, Chief Engineer, for instructions. He advised us that since the car was going to pieces, we had better return to Syracuse. We argued that while we were reporting major trouble, the car was holding together and was capable of going to California and back. Therefore, we continued to proceed. (514 miles)

March 29: Drove to Tucson, Arizona, without incident. (769 miles)

March 30: Reached El Centro, California, late evening. Beautiful hotel. Still having brake trouble. Carburetor trouble also, which indicates that metering was not worked out properly, since rich carburetor did not correct stumbling condition. Received wire from Ed Marks to take a good rest in Los Angeles. Arrived in Los Angeles next night and received wire from Ed Marks to hustle back to Syracuse as fast as possible. (411 miles)

March 31: Telegram from Ed Marks asked us to check the riding characteristics on car from El Centro to Los Angeles. John Burns drove and I acted as observer. In one of the dips, springs bottomed, throwing me up into wooden top, causing a deep gash in my head. Springs altogether too soft. Arrived Los Angeles 8 P. M. Wired factory that springs on all cars must be changed, since they were too soft. (257 miles)

April 1: Took car to Lockheed Brake Service where we attempted to have the brake condition corrected. They relined the brakes and realigned steering gear while John Burns called on a relative in Los Angeles. Left Los Angeles for Needles, Calif., at 2 P. M. John Burns drove car wide open across desert averaging as high as 84 miles an hour. We arrived Needles late in the afternoon. Averaged 5 miles per gallon of gasoline and 200 miles per gallon of oil. Car performance good. Passed sign on road pointing to Death Valley Scotty's home in desert. Scotty, a loyal Franklin owner, still a mysterious person. No one seems to know where he gets his money other than gold mining. Stopped at Harvey Hotel in railroad station. I was sick. Went to bed in hotel and tried to rest. Trains passed through station. All rooms very noisy. (252 miles)

(Note by Editor:—The source of Scotty's money remained a national mystery right up until his recent death, when it was "revealed" that a Chicago millionaire, A. M. Johnson, had been the real gold mine. However, this fact was known 28 years ago to the readers of the April 1926 issue of THE FRANKLIN CAMEL NEWS, the very fine publication of Ralph Hamlin's Los Angeles agencies. Mr. Johnson also drove a Franklin, a custom built coupe equipped for desert travel.)

April 2: Just before leaving Needles, bought souvenirs from Indians—bow and arrow for David. Surprised that Indians talk such good English when cornered; otherwise they make just typical Indian grunts. Rather difficult to predict age of Indians, except when they were old and grizzled up; but all apparently making good money. Left Needles 8 A. M. Advised factory we would be in Springerville, Arizona, that night. Arrived Springerville 8:30 P. M. Found no phone connections or telegram connections, since phone closed at 8 P. M. No restaurant open. They also closed at 8 P. M. Saw a light in a building, walked in and found restaurant was having an American Legion banquet in session. Pleaded with proprietor to serve us a meal. We ate in kitchen. Nice steaks; each one bigger than platter. Could not wire factory our whereabouts. Excellent hotel. Springerville 10 miles from railroad. Interesting community. Wondered why people would settle so far from other communities. (430 miles—almost all dirt roads in 1932)

April 3: Left Springerville 8 A. M. Drove to Tucumcari, New Mexico. Nothing extraordinary except flat desert roads. (423 miles—all dirt or gravel roads in 1932)

April 4: Left 6 A. M. Arrived Salina, Kansas, 8:30 P. M. Beautiful hotel. Excellent dining room. Had broiled mountain trout. (515 miles, mostly dirt roads)

April 5: Left Salina 6 A. M. Drove to St. Louis. Stopped at Hotel Statler. Contacted Wagner Electric Co. Were requested to bring car out to plant so brakes could be worked on. We were operating with brakes on front wheels and one on rear wheel, since there was trouble with the flag staff. Wagner Experimental Dept. rebuilt brakes while General Manager Burns Dick took John Burns and me to dinner at speakeasy. All liquor consumed by Burns Dick carried on the hip of the bartender. Other liquor stock somewhere in the basement. Also noted enormous amount of money spent in slot machines. Bill Shaley said he did not spend any money in them, since he built springs and they were all tricked. Impossible to make any money on them. (466 miles)

April 6: Left St. Louis 6 A. M. Arrived Columbus, Ohio, at 8 P. M. Stayed at Hotel Daischler-Walock. John and I went out for a late dinner; had oysters and a big steak. John advised me not to eat the oysters, since oysters so far away from the sea coast could be no good. He was correct, as about 3 A. M. I awoke terribly sick. John called in from his snug bed, "It serves you right. I have no sympathy for you. You can die for all of me." I asked what caused such an outburst. He said: "Anyone who would eat oysters so far away from New York, plus ice cream, should die." Then he finished by saying: "I am going back to sleep. Die if you want to." (411 miles)

April 7: We left Columbus at 8 A. M., John driving, as I was still under the weather. John put the throttle to the floor and off we went for Syracuse. We arrived at my house at 8 P. M. A very good drive. The front door flew open and out came Christine followed by David. The way I was welcomed, it seemed as if I had been away from home for two years. Of course, I had a present for David, and the present was more important than getting his father back. (465 miles)

April 8: John and I arrived at the Franklin Plant at 8 A. M., even though Ed Marks had told us to come in late as we deserved the rest. No sooner had I arrived than the phone rang and Mr. McEwan, General Manager, wanted to see me. Then he started to criticise everything we had done on the trip which did not meet with his approval, including accusing us of being out on a joy ride, when we had been to California and back in approximately 13 days, slept little, and worked on the car every minute that we could spare to keep it going. Nevertheless, John and I were proud of the trip and proud of the car which had done such a noble job. However, we both received the compliments of Ed Marks, our boss, as well as Mr. Franklin, John Williams, Sales Manager, Hugh Goodheart, the Advertising Manager, and many of the good old Franklin boys.

* * * *

Following are some answers to specific questions concerning the trip which were addressed to Mr. Doman. (1) It may be a surprise to you to know that under orders of the General Manager of the Franklin Company, we refrained from raising the hood in the presence of garage people. Management desired that the car be somewhat of a surprise and, for that reason, we did not stop at Franklin dealerships on the way to the coast and back. We had many people conjecturing over the make of the car since its body lines were so unusual. We had people follow us for miles attempting to discover what type of car we were driving. (2) I can't recall any specific traffic duels or flat-out races which John Burns and I had with cars on our coast trip. If I recall correctly, the car had so much speed that there wasn't any race whatsoever; we just passed everything on the road. (3) Once we installed the overdrive real axle, gasoline economy was very surprising. We had many cases where customers reported 14 to 16 m.p.g. Today I rechecked the gasoline figures and find it should have been 5.75 miles per gallon based on the specific fuel consumption of .6 lbs. per brake horsepower hour with the engine developing 150 h.p. (4) As far as oil consumption is concerned, the 200 m.p.g. was not representative of the production cars. Once we got the engine going smoothly in production, we had many cars that ran 750 to 1000 miles per quart of oil. (5) As far as the top speed of the car is concerned, I don't know exactly how fast it would go. However, I doubt that it would do the actual miles per hour which Mr. D. Cameron Peck mentioned. No doubt his speedometer read fast. (In fairness to Mr. Peck, he did not claim to have driven his V-12 that fast, but rather estimated the top speed would have been 95 miles/hour on the basis of its performance from 60 to 70.) (6) I have expressed myself several times regarding the V-12 Franklin as finally produced. Ed Marks and I never felt it was truly representative of the Franklin. It was very heavy; it had semi-elliptic springs; its ride was not good; it was not nimble and easy to handle as previous Franklins. Nevertheless, we believe that the production car was reasonably free from mechanical troubles.

By this time, the Engineering Department consisted of Ed Marks; Sid Davis, designing; Frank Chadwick, specifications; Irv Carter and myself. John Burns shortly after the West Coast trip had been released. This was, indeed, a sober period as the Franklin Company was such an intimate part of John Burns. He just couldn't comprehend why he was not kept, but of course we remained very close and later he joined me at Aircooled Motors as Chief Experimental Engineer.

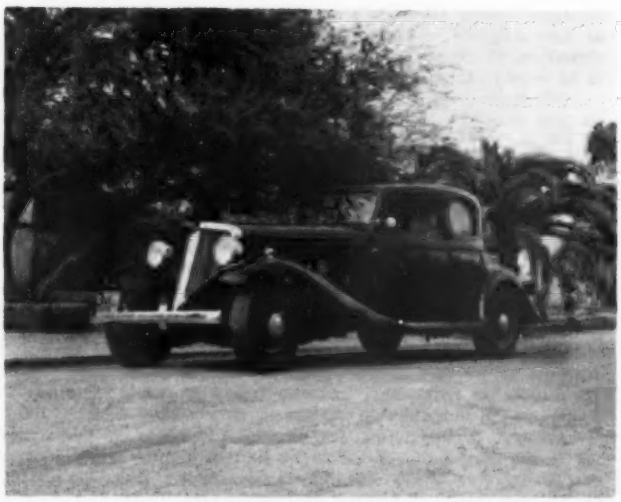
The Franklin 12, or Series 17, went into production in 1932 and things seemed much better, but the car didn't sell and only a total of somewhere around 275 were built.

I still believe that if Mr. McEwen had taken our advice and had put the 12-cylinder car in production as originally designed, the future of Franklin would have been vastly changed. Old Franklin owners would have been attracted to the car because it had all the sound features of light weight, flexible construction, ease of handling and most important, ease of riding. The car that went into production had just one Franklin feature—direct air cooled engine. It had extremely poor quality, and extreme weight—over 6,000 pounds. Bodies varied over 300 pounds in weight because of poor sheet metal, solder was used to fill the "gaps."

Futile attempts were made to incorporate changes which would accelerate sales, such as the Columbia two-speed rear axle. But nothing was successful and sales became less and less, until finally in 1935 the operation ceased. Of course, Ed Marks and I hoped to be a part of a reorganization, but our hopes were dashed in that there seemed no one who could be found willing to invest in Franklin. Investors were hesitant. Why I never could tell, possibly because the engine was different—direct air cooled, but I doubt it. I do know, however, that after eleven years in the Detroit activity, that the automobile business is one that requires many millions of dollars for success. An investment of two or three hundred million in a new model is not uncommon. In 1935, we were looking for only five million. Possibly we were fortunate that we could not find the five million, because I believe it would have been insufficient.

The story of the Franklin 12 is interesting for me to recall. Yet is difficult to put on paper. Perhaps, if my readers had been through the Franklin experience with me, we could have greatly enjoyed reminiscing together. But, since only a few of us were in Franklin at the same time, the best that I can suggest is to write me if you have any questions, and I will do my best to answer. But, remember, it happened around thirty years ago.

CARL T. DOMAN



The pictorial story of an early Franklin pilot

"Frank Garbutt in that White Steamer was leading me alright when the picture was taken but the Franklin went on to win. It was five miles, we made it in five minutes and fifty seconds. We won four other races with the Franklin that day." So says Walter Winchester in describing our lead picture taken at Los Angeles on the fourteenth of November in 1903. The Franklin, of course, is a regular chassis of 1903 that appears to be somewhat modified in control and seating for track racing.

We have only the sparsest data on Mr. Winchester himself, he just wouldn't expand too much on his own history. Walter F. Winchester was born in Eaton, New York on October 30th, 1876. The family moved to Syracuse in 1885. Walter left school in 1892 and took up the trade of barber. While working as a barber in Syracuse he studied electrical engineering and then went to work for a glass house in Kane, Pennsylvania for a year or so, returning to Syracuse in 1899 to take up a job with an insurance agency. Sometime around this period the Spanish War was going on and there must have been a military interlude for somewhere I have seen a picture of him in cavalry uniform. But he does not mention it.

Apparently he did not care too much for the insurance business as we find him back at the barber chair until around the middle of 1902. That year he began working for Franklin and was soon launched on his career as a racing pilot.

After a pretty active and successful couple of years with the Franklin the Pierce-Arrow outfit snagged him late in 1905. For about five years he did demonstrating and competition driving for Pierce, including several Glidden Tours.

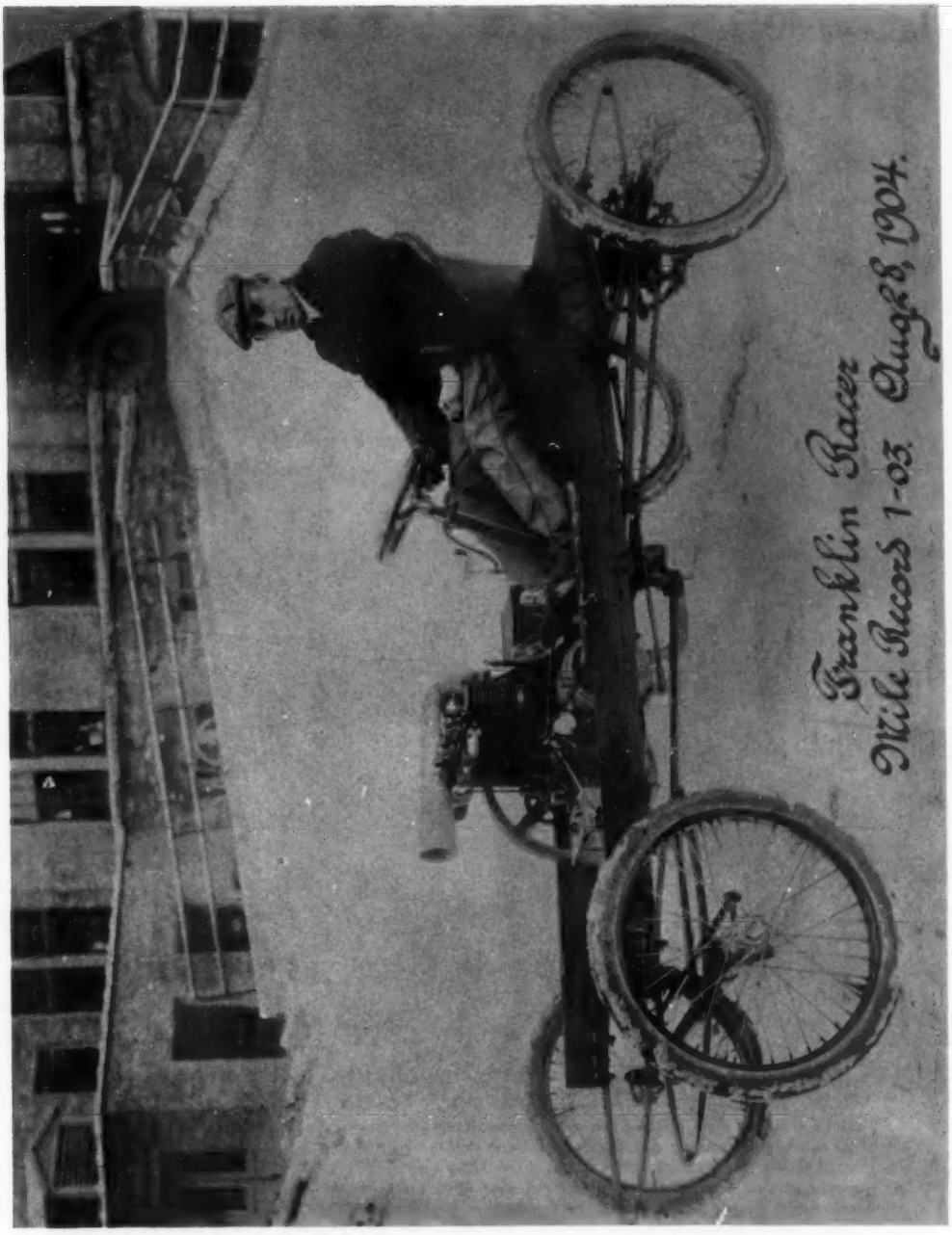
After five years with the Pierce-Arrow he decided to leave the road and move indoors so he went to Jacksonville, Florida and operated a combined Franklin and Pierce dealership there. In 1919 he gave up the dealership and started to work with the Cleveland distributor for Franklin. The distributor at that time was Clayton Carris. Mr. Winchester told me that, many years earlier, he had taught Carris to drive

Walter left the Franklin outfit in 1927 and was Sales Manager for a Chevrolet dealer for the next six years. That was his final appearance in the automobile field for he then worked the following twenty years or so for Inland Steel Company until retirement in 1954.

Mr. Winchester also cleared up the confusion caused by "J. J. Winchester," who occasionally appears listed at the same race meets with Walter F. "J. J." seems to have been purely and simply a reporter's mistake and Mr. Walter tells me he never heard of such a person!

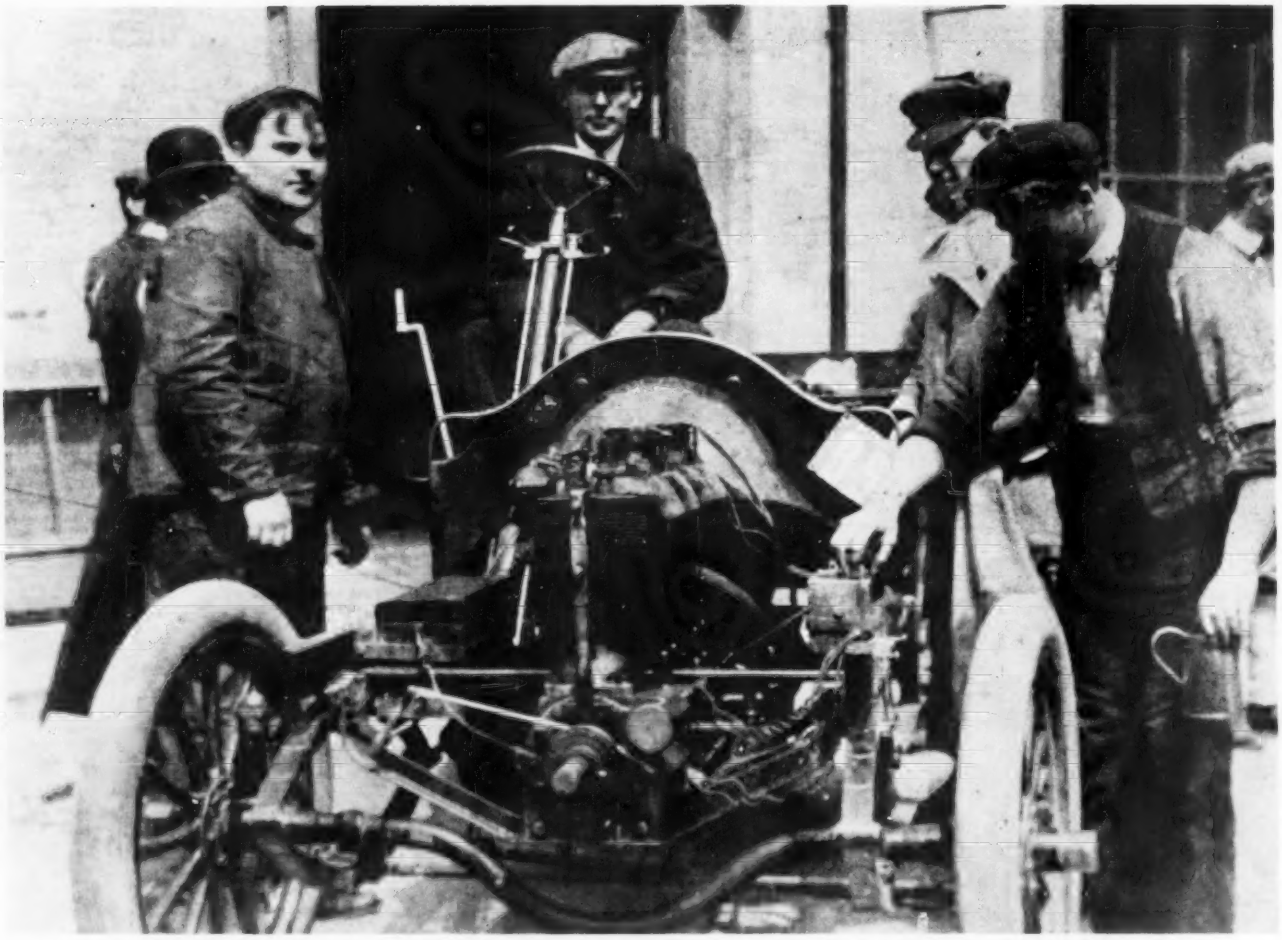
Franklin assiduously pursued racing in it first couple of years, as did many other early American makers. Walter Winchester was the driver in many of these races. In the pictures that follow may be seen a number of weird and wonderful beasties that bore the pennon of Franklin in those early years. I think some of them will bear out the remarks of Peter Helck, ". . . . the foreigners seem to have been forever amused with the unorthodox machinery our makers were evolving for racing purposes."

—A.H.A.



This picture was made at the factory. Mr. Winchester did not state where this mile record was made but probably at the Syracuse Fair track. This is definitely a specially built car. The chassis looks about thirty inches longer than stock. It is a single seater with controls to the left. The little crank handle near the steering post is to more easily control the needle valve. The engine uses the HERZ timer and a ratchet type mechanical oiler. It has automatic suction valves and appears somewhat larger than the stock engine, cylinder construction is different from stock. The unusual "horn" over the top of the engine was to provide an ample supply of air to the carburetor, a primitive 'supercharger.' The rear sprocket is quite small.

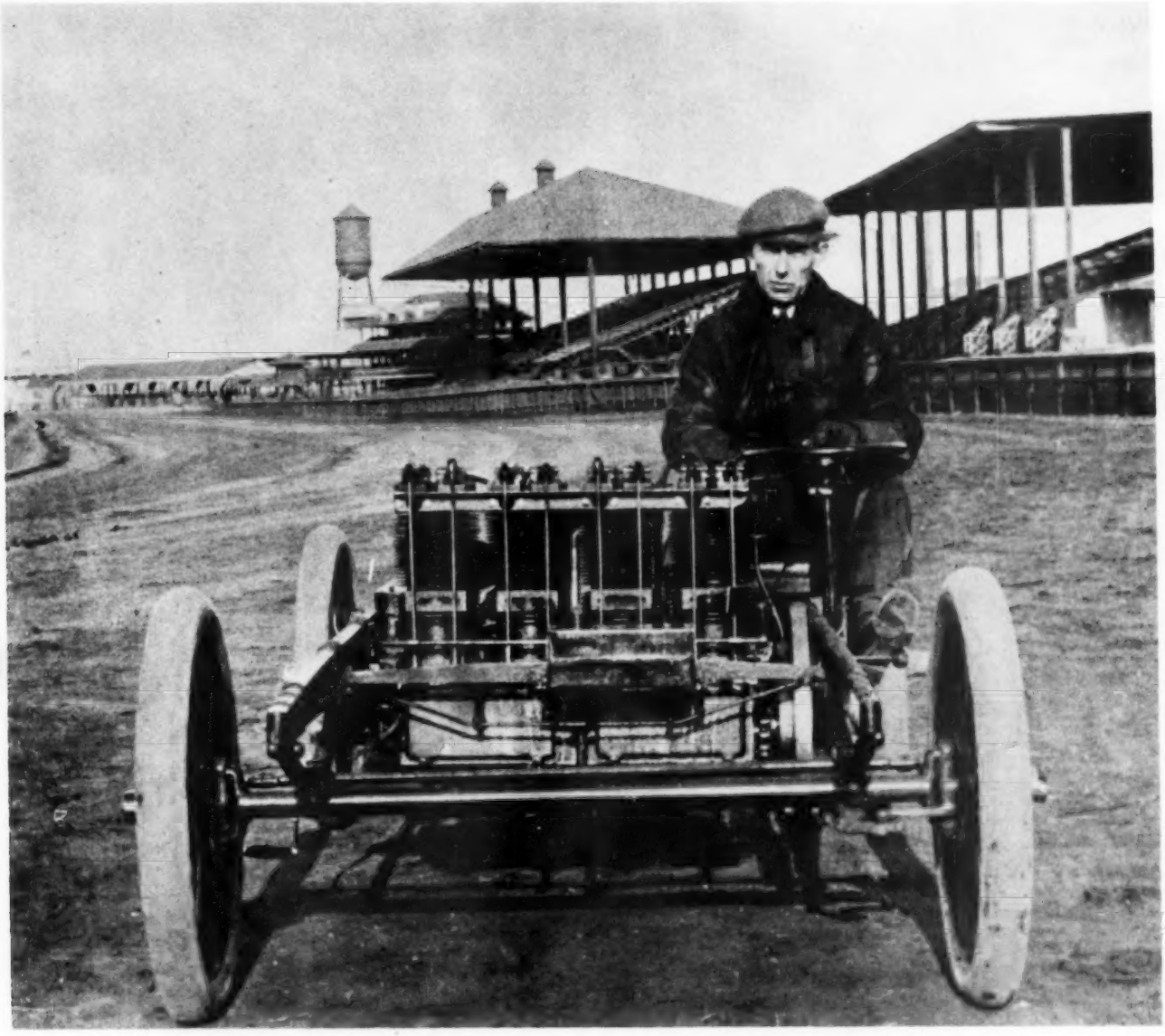
Mr. Winchester drove this car in races at New York, Philadelphia, Boston, Albany, Syracuse, Buffalo, Detroit, St. Paul and St. Louis. At St. Louis he won the Anhauser-Busch trophy with this car.



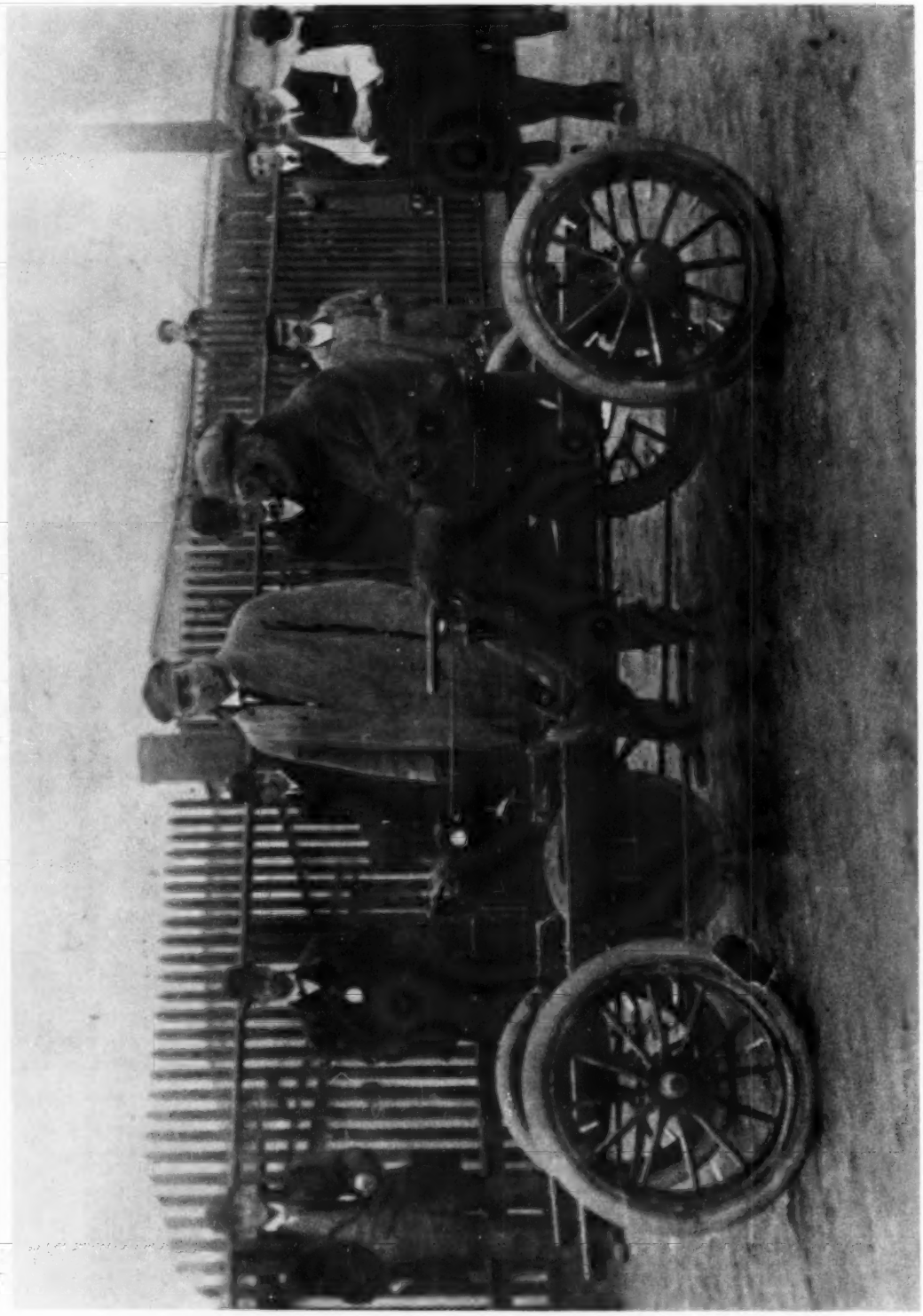
Mr. Winchester says that he took this 1904 Type C to Boston for a hill climb, he does not report results except to say, "We did not win." Arthur Baugs, the Boston dealer is the man in the light coat just behind the mechanic who is adjusting spark coils.

This big 5 x 4 . . . yes, that's right it was "oversquare" . . . engine drove the car through a two speed planetary transmission, a double universal drive shaft and a bevel differential rear end. The front axle is deeply curved, tubular but an apparent transition from their straight axle to the later evenly curved one, it appears to have a Lemoine yoke and is the first Franklin to have underslung springs. This car, by the way, had a round grille in a not quite round hood as the dash will show, it was thus the first Franklin to be identified with this form.

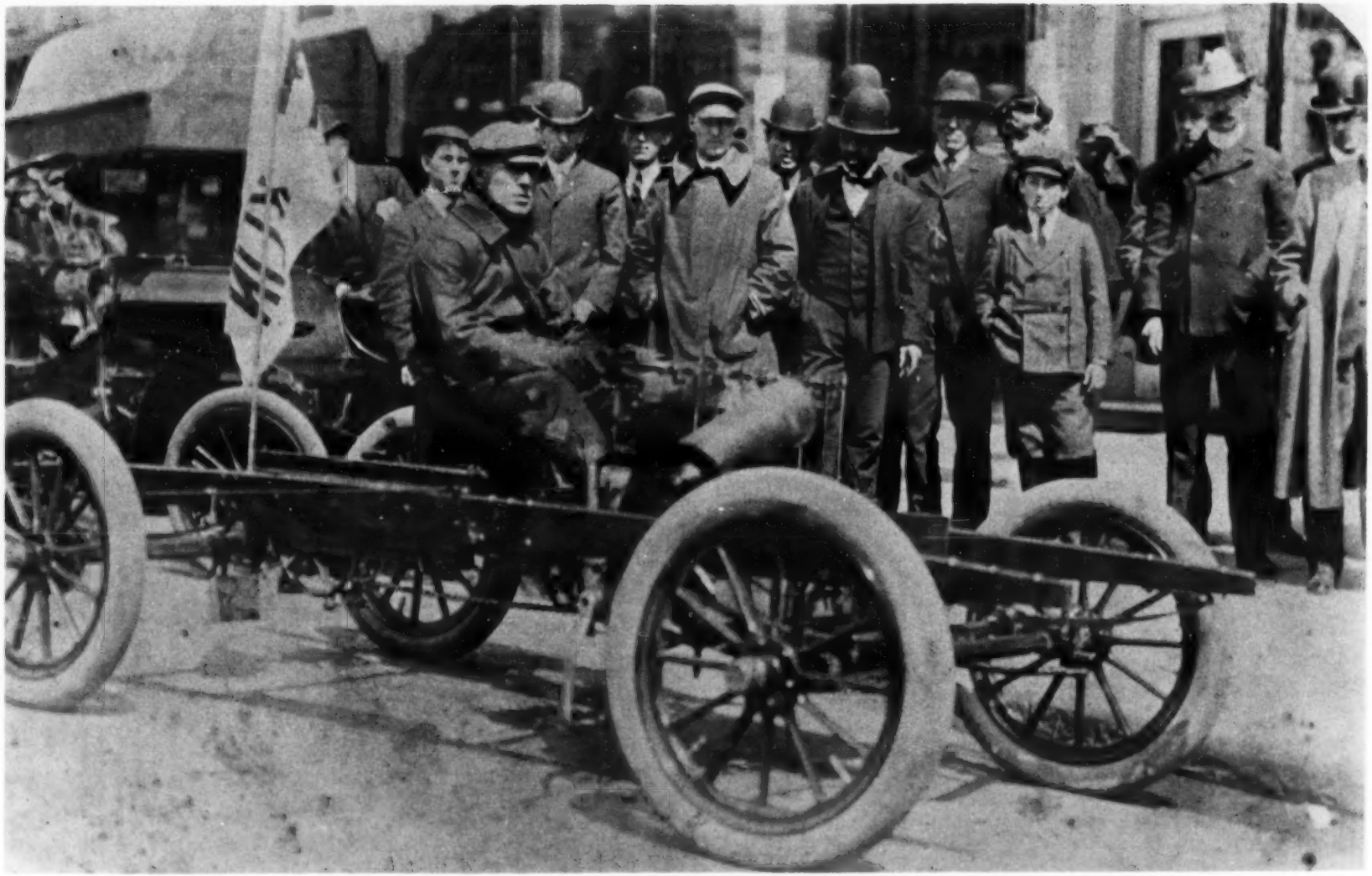
The engine had cast steel cylinders with copper fins, a practice soon dropped by Franklin but revived, in different form, by Chevrolet in 1923. Crankshaft and rods were also cast steel. Crankcase was iron. Valves were in cages, automatic intake and mechanical exhaust with adjustable pushrods. It had five main bearings of bronze, as were rod and camshaft bearings. Ignition was by four coils and the unusual high tension ignition bar as used on the first of the cross engines. Lubrication was splash, metered with a power pump. The strap showing in front of the first cylinder was a support for a belt driven fan.



At Brighton Beach in 1905. This seems to be about the size of a Type C engine but Mr. Winchester states that it was a special. It has mechanical intakes and auxiliary ports, these ports were covered for street use and a muffler was fitted to the main exhaust manifold. The cylinder fins are quite thin and are of the copper type used on the Type C. The ignition device is not recognizable but is mounted on the right side of the engine and controlled by the rod passing behind the oil tank. The oiler is the vacuum type used on the regular 1905 cross engines. There is a large diameter, very thin flywheel, quite unlike stock cross engine practice. It was planetary transmission but the control of this transmission is not clear in any of the pictures. It is most emphatically left hand drive, the steering post is even mounted outside the frame. Notice the truss rod under the front engine bearer. It appears to have had an aluminum crankcase which was stock by 1905.

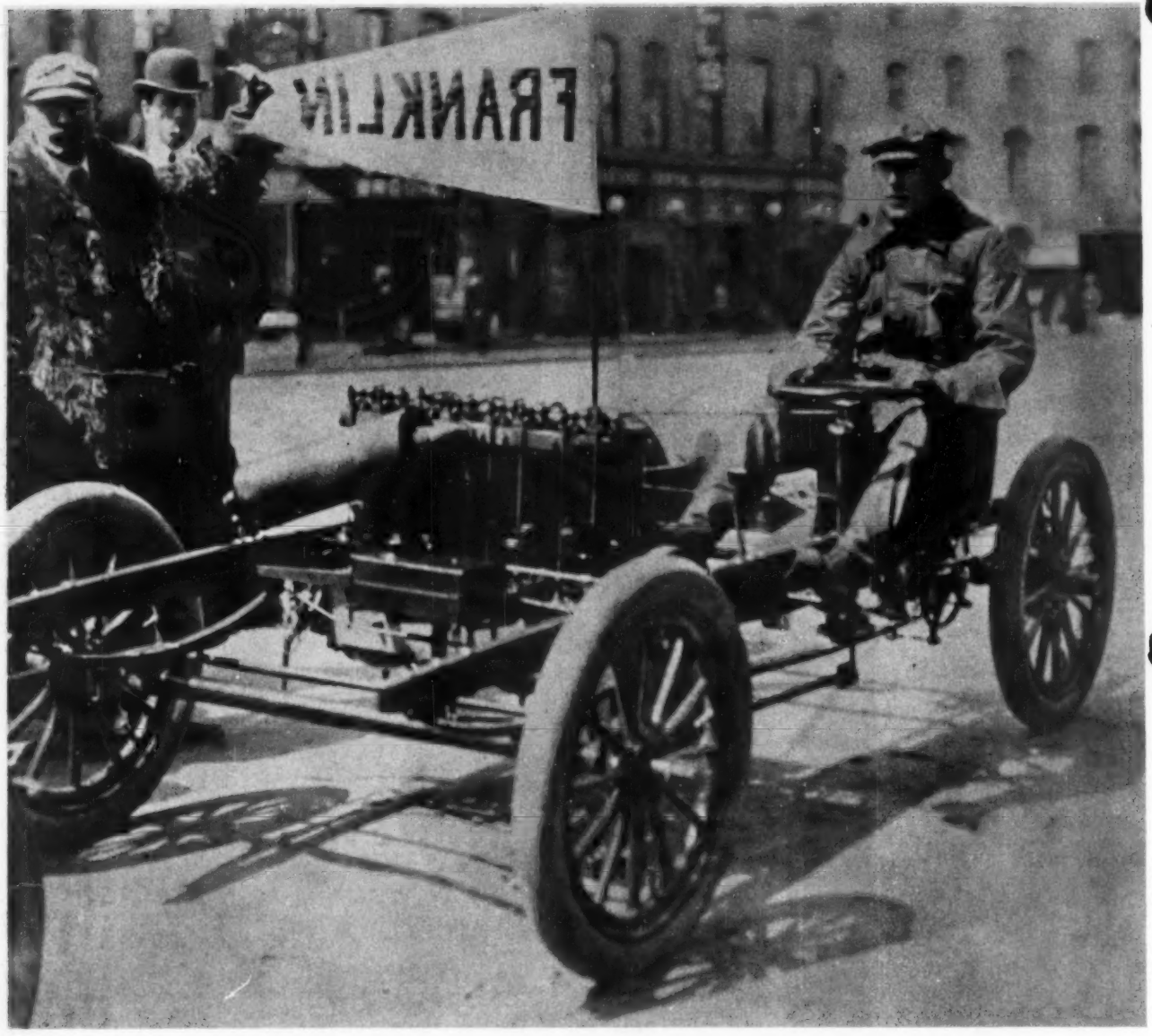


Here is Winchester's "large economy size" cross engine job at a track in Chicago the same year. This one clearly shows the rod going from the steering post to the engine. It also gives an idea of the size of the flywheel which was nicely aligned with the midline of the driver! The gentleman standing alongside the car and wearing a light topcoat . . . did we call them topcoats then, I can't remember? . . . is Arthur Benjamin, Franklin's Sales Manager at that time. That driver's seat could surely be called a "bucket," the back does not look more than about five inches higher than the cushion. Just about the level of Mr. Winchester's right foot may be seen the intake pipe coming from a right mounted carburetor and angling toward the middle of the engine. The usual needle valve control shows at the same point.



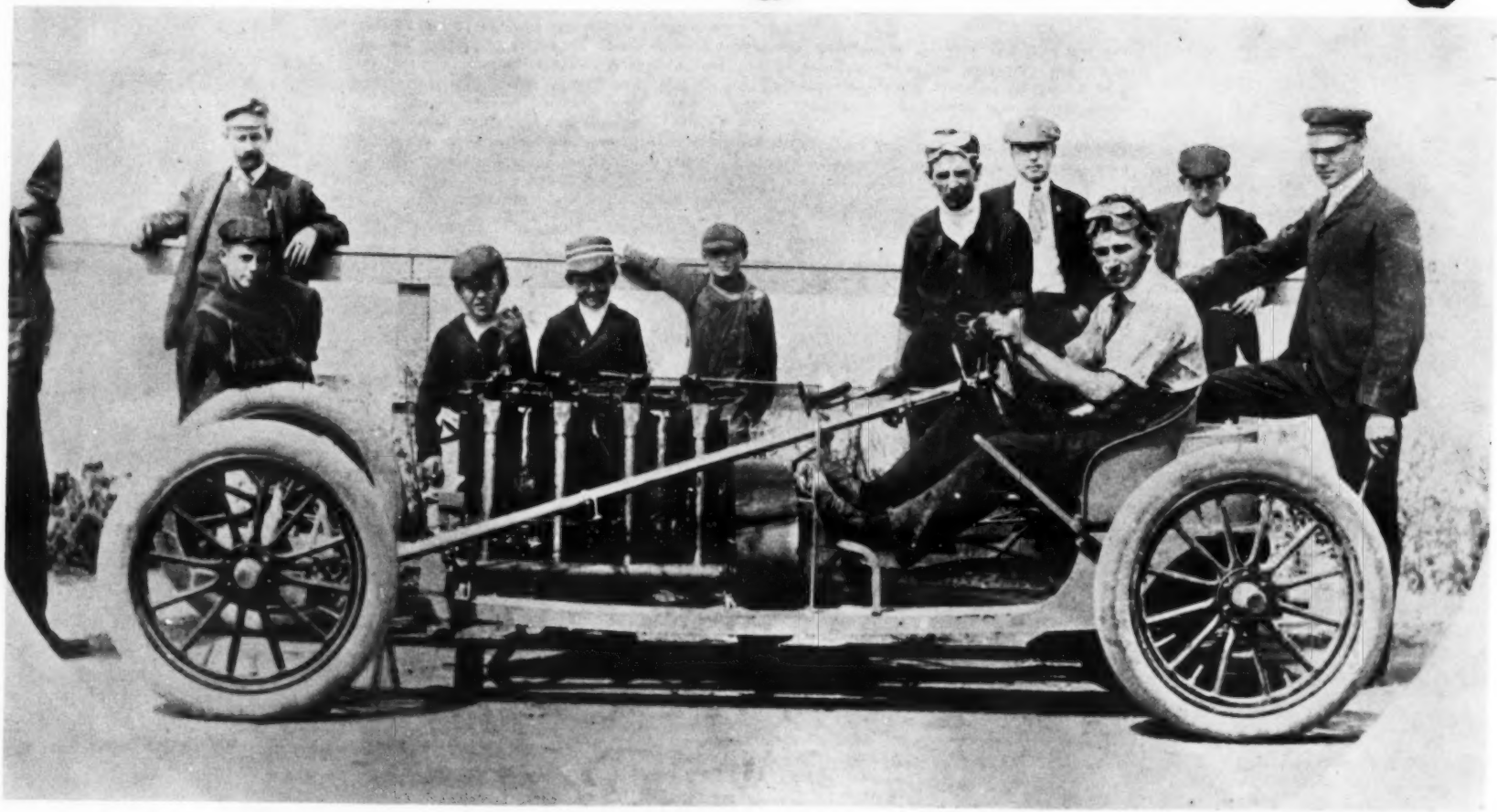
The jumbo cross engine also was raced at Philadelphia. In this picture the light sectioned and sharply tapered wood frame is clearly seen, also the semi elliptic springs. The length and position of the crank would seem to indicate that starting up this huge mill might have been a little risky to knuckles, the crank appears to be fixed

The car directly behind it is a 1905 cross engine of a body style hard to identify. The onlookers afford a good study in men's styles for 1905, especially derbys, there is difference of opinion on degree of rim curl.



The Brighton Beach car was raced in New York. This picture shows the quite long brake pedal and the foot rest outside the frame. The light rod passing behind the brake pedal is the spark control, the rod going from just below the wheel to the engine is apparently the throttle control, carburetor was the same as on the small engines but it must have placed the actual throttle control at the top of the intake pipe instead of just above the carbureor as was more usual. This one also shows the blocked ports and the muffler that were necessary for driving on the streets. Imagine the racket from that five inch bore job!

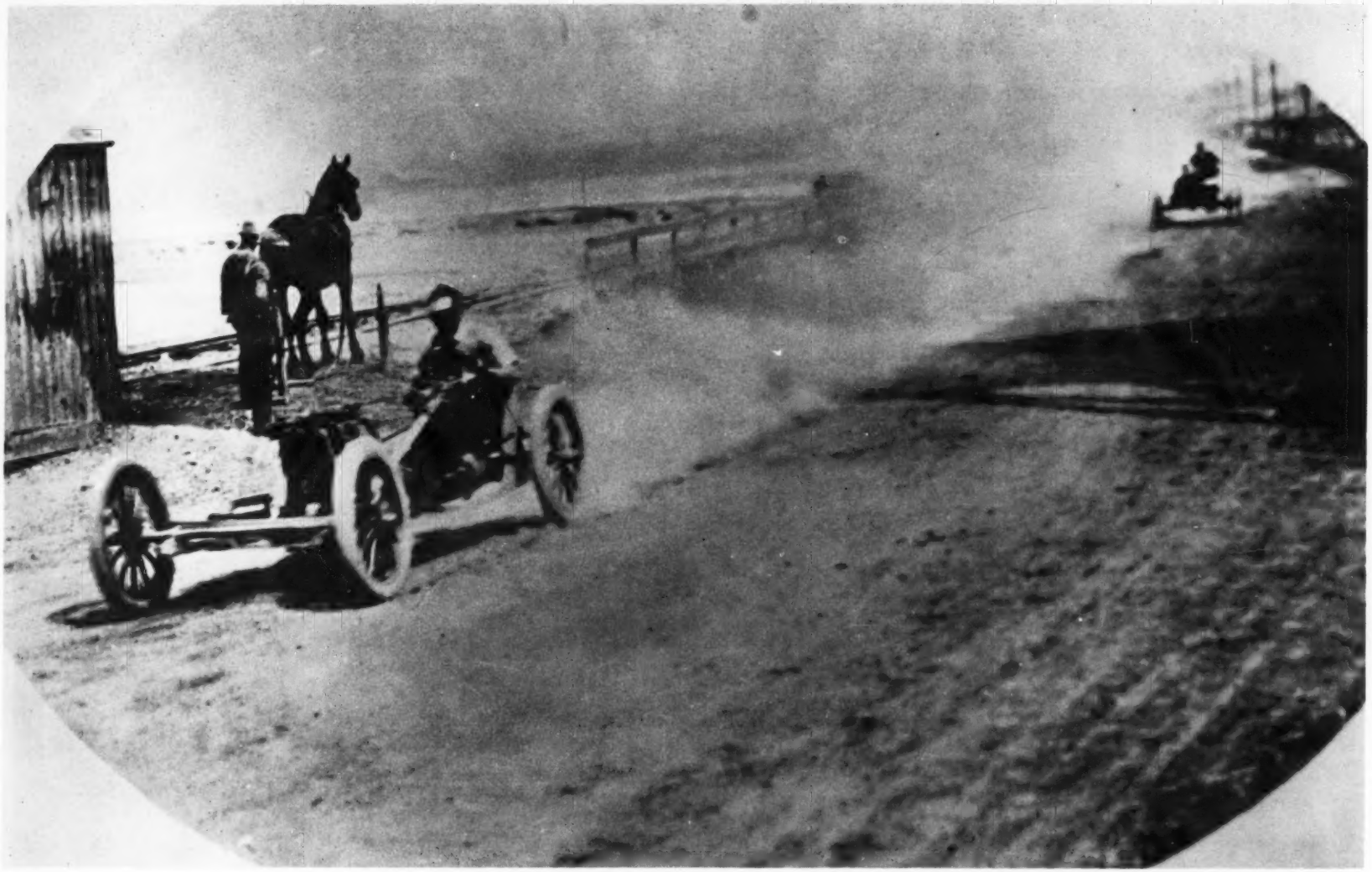
The gentleman in the fur coat with the limited knowledge of photography is unidentified. This is a New York city street fifty six years ago, could anyone there have imagined what a photograph today would show?



Another fashion show, this time it is caps. Except for Winchester they are all unidentified, that is a classical Teutonic type at the rear and the man with dark shirt and goggles looks enough like Walter to be his brother, though he is not mentioned in Mr. Winchester's notes.

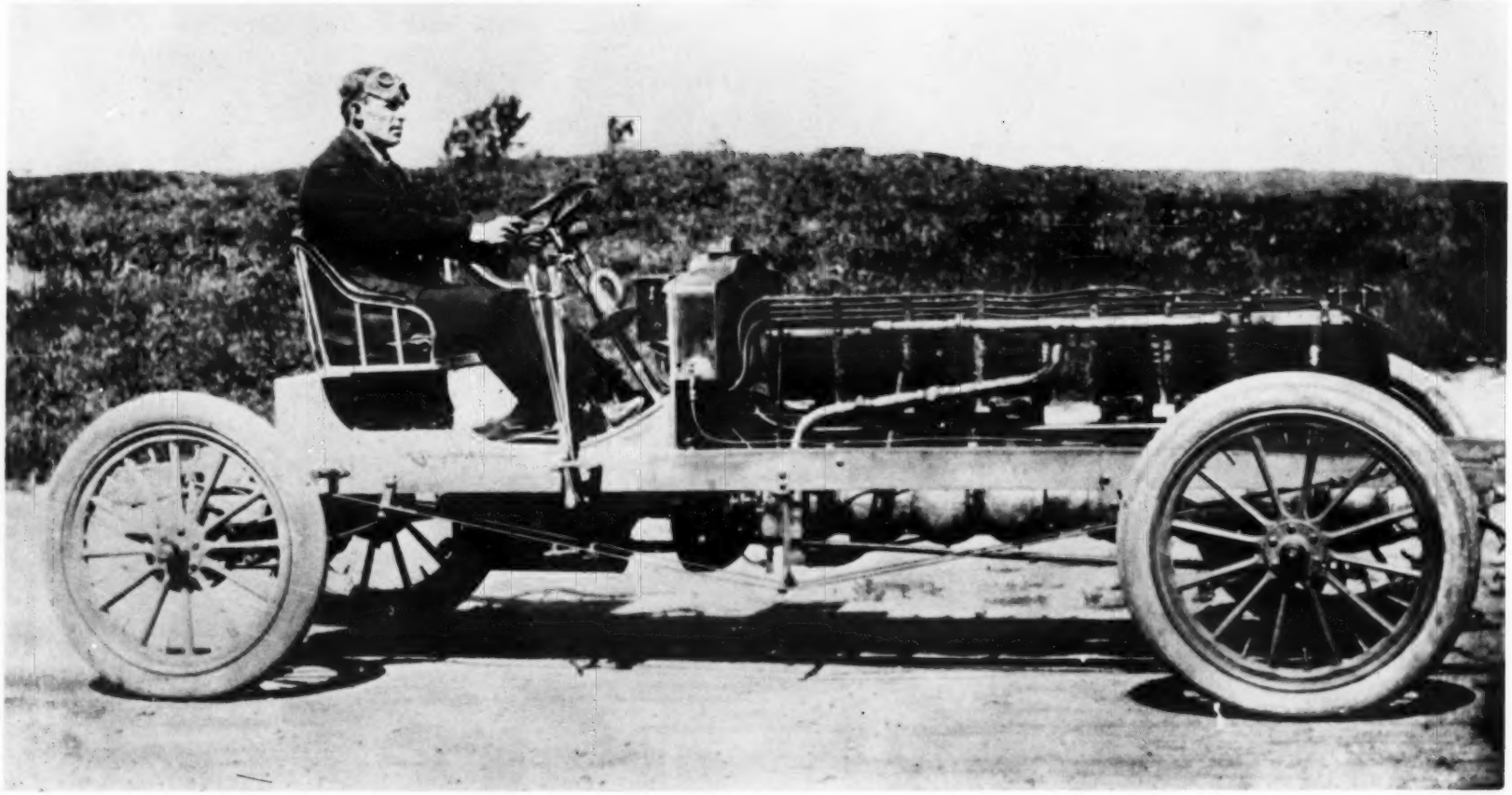
1905 seems to have been the year when everybody had a try at Franklin in building way out cars. That was the year of the Model D, the Type F, the first six, the straight eight and the jumbo cross engine racer. This one is really something! Winchester briefly describes it as a Type C engine with a two speed progressive transmission. Some of the details are a little hard to tie together. The lever on the side may be the shift lever but may also be the hand brake, no brake drums are visible so it must have had only a transmission brake actuated either by this lever or a pedal for the right foot. The steering post is the longest ever seen and appears, wrongly no doubt, to be entirely unbraced. As in the big cross engine job the throttle valve must be at the manifold for a similar rod goes from just below the wheel. Spark control may be seen half way down the long post. Once again it is left hand drive. Mr. Winchester does not give any details of its speed or any race results in his notes.

In this car Franklin went all the way on the vaunted resiliency of their laminated wood frame. This one has a thin wood frame slung under the axles and no springs at all. At the Trek last year Walter told of racing this car and that when it got going pretty good it would sometimes start bouncing until the flywheel would shoot sparks from hitting the gravel track . . . slightly disconcerting!



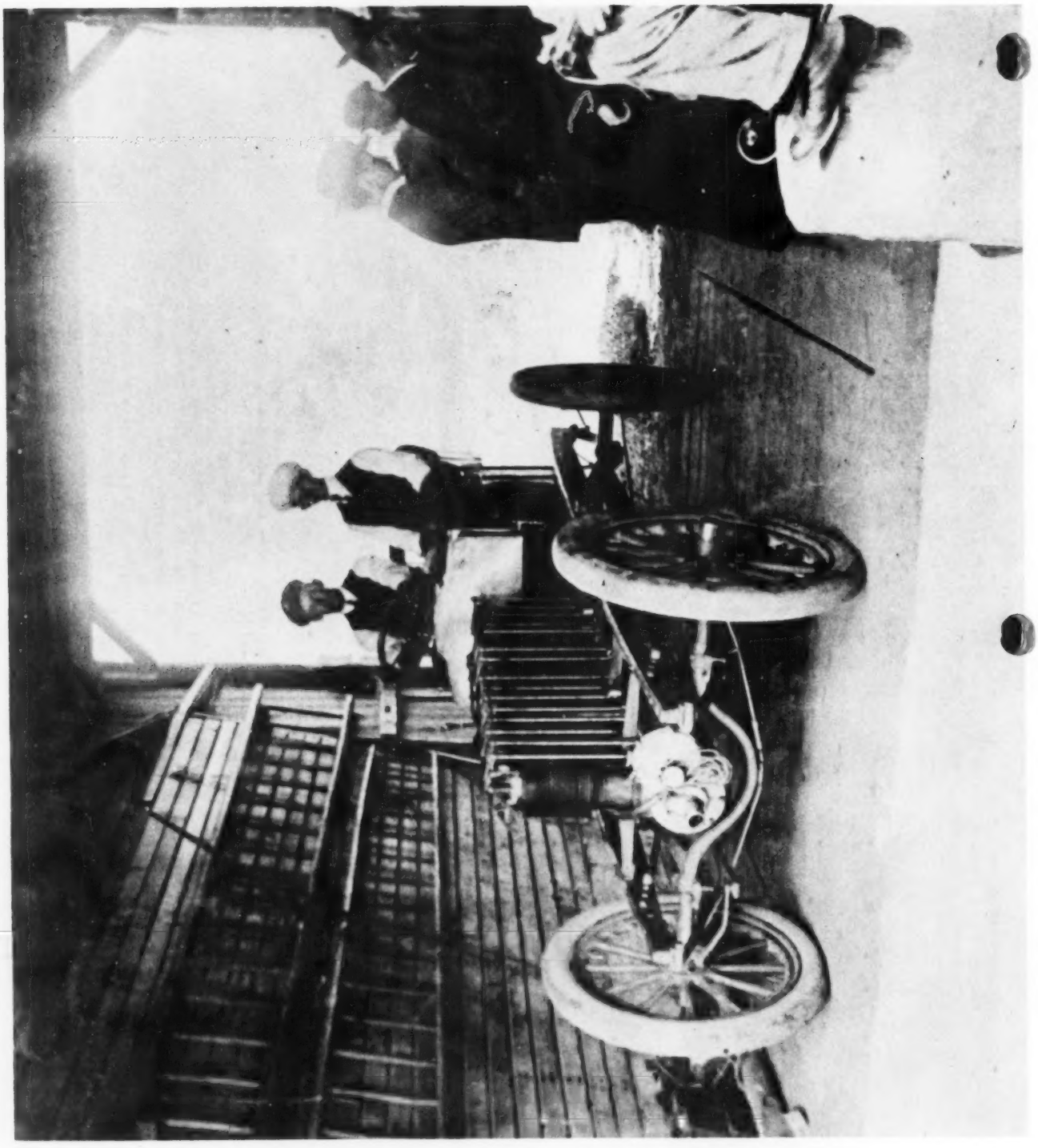
Winchester vs. Wilkinson on the Syracuse track sometime during 1905. This must have been practice or car testing as there seem to be no spectators, even the two gentlemen to the right hardly seem to be wildly enthusiastic race fans.

Winchester, with Bouncing Billy, seems to have a fair lead on Wilkinson who is driving the special cross engine with the long frame and the horn "supercharger" that is shown in the factory yard and credited with just under sixty miles an hour, so the springless sprint car must have had a fair amount of speed. This picture, among others, was shown on the screen at the Trek, it was at that time that he told of knocking sparks with his flywheel.



This is the famous straight eight built for a try at the Vanderbilt Cup, Walter Winchester at the controls. Legend has it that this car and the Type C shown at the Boston Hill Climb were actually owned by Colonel E. H. R. Green and were raced for him by Winchester. This was definitely not so, they were both owned by the Company and campaigned by the Company, for reasons understandable only to Madison Avenue types Franklin publicity boys of the day saw some merit in letting them be tied into Green's name. Some of you young readers will have to do a bit of checking to understand why there should have been any merit in letting them be identified with the Colonel. The car was entered in the Vanderbilt Elimination Trails of 1905 to select an American Team. It didn't win, it didn't finish and was never raced again as far as is known. Here are Mr. Winchester's very brief comments, "The two engines were the same as the one in picture No. 3 (Brighton) coupled together. It was a shaft drive with a 2 speed progressive transmission. We never got the exact speed but it was much faster than any car that I had ever driven. I made 2 laps of the course and half way around the third the rear universal came apart and the drive shaft came up through the floor boards and we were through." ! ! ! ! There is a short story about these Trails in ACN for December 1957.

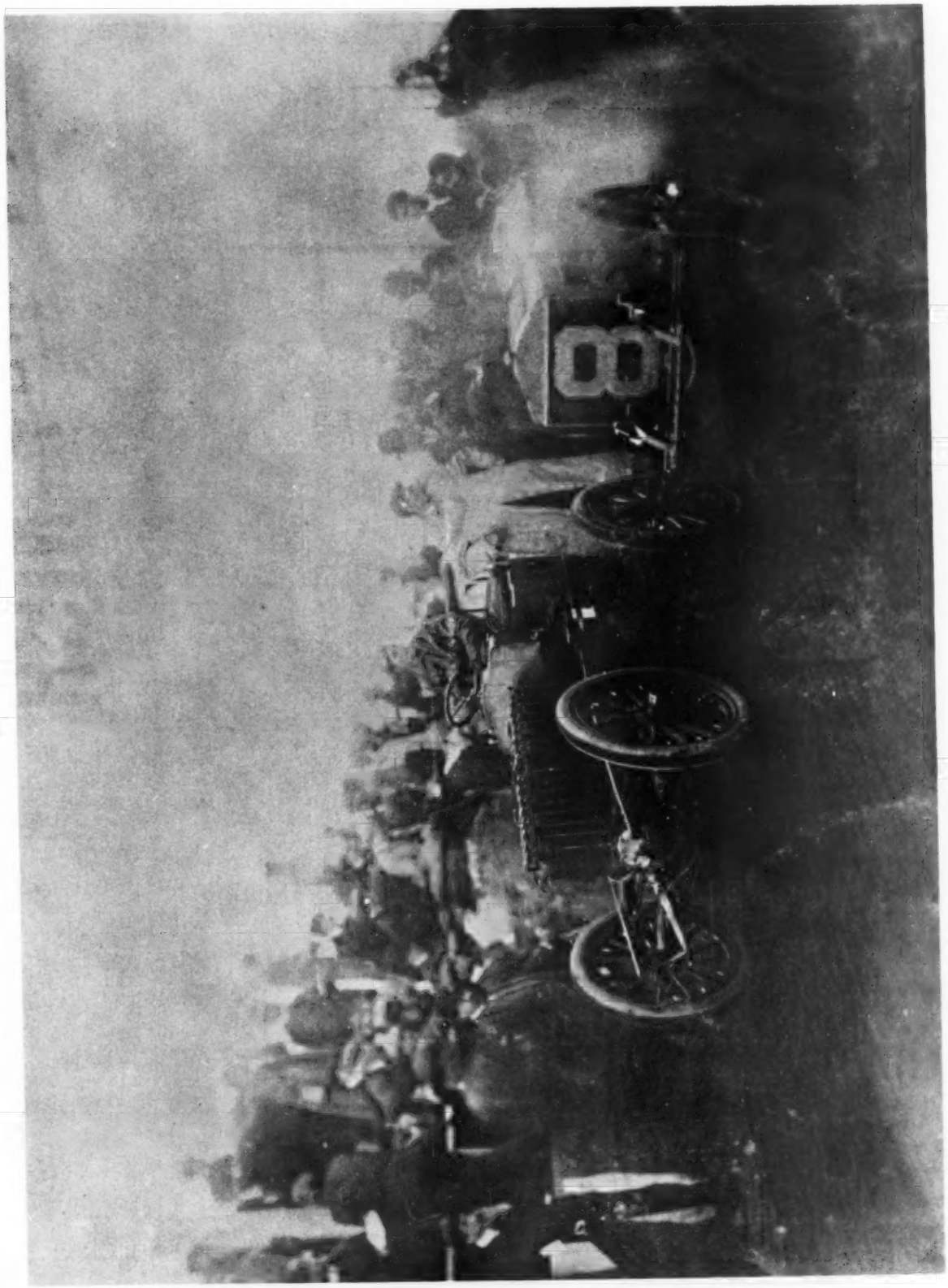
Note the frame with semi elliptic springs and the long double truss rods. Just behind the center post of the truss may be seen the carburetor, that one poor lone, stock size, pot had a man sized job, eight five inch cylinders fed through what looks like about ten feet of intake tubing . . . today's designers would probably use around sixteen carburetors! Ignition was by individual spark coils and an eight point commutator. Quite a boat.



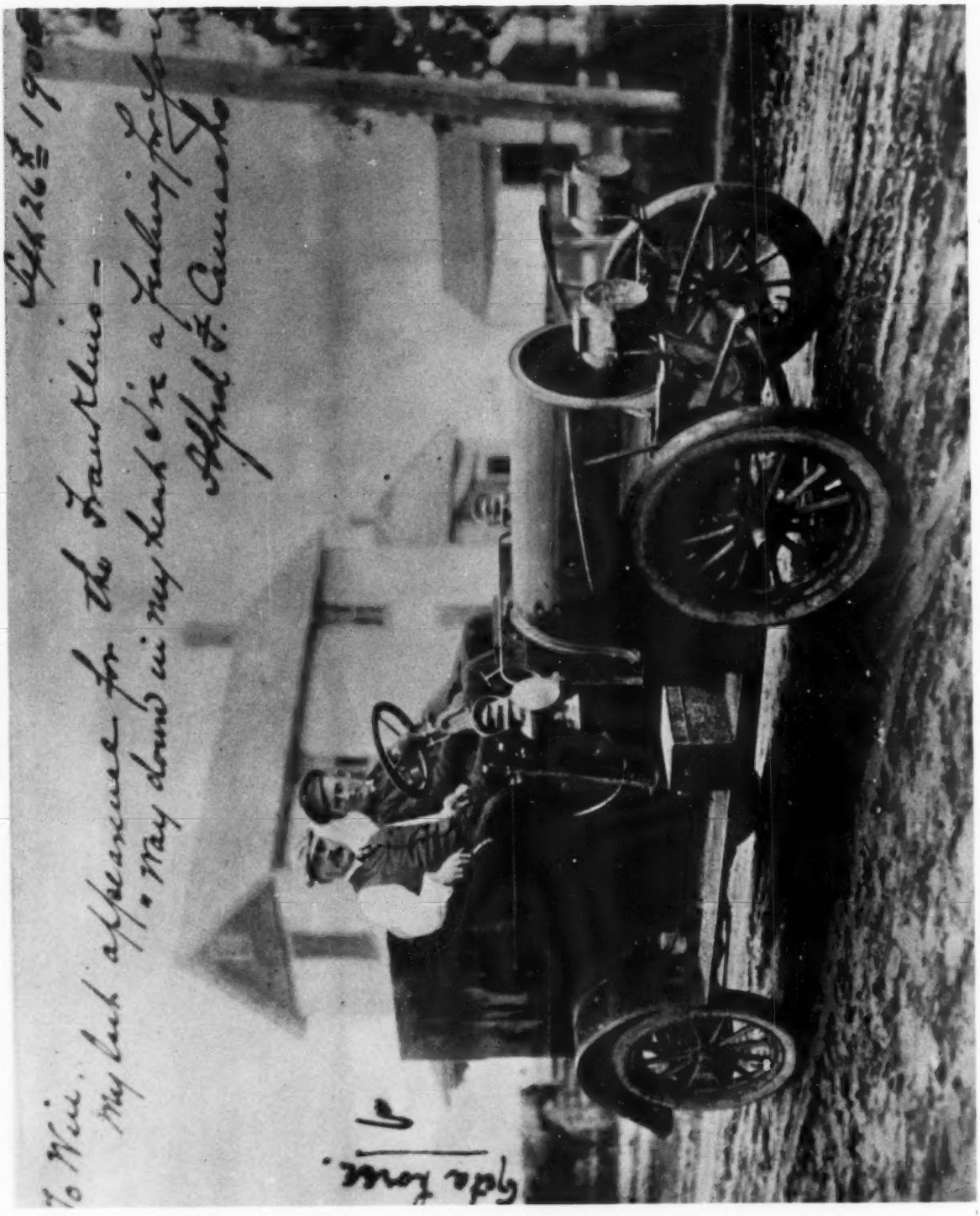
Here is the weighing in ceremony at the Trials. The Franklin weighed in at 2182 pounds, its wheelbase, by the way, was 128". That wheelbase and a steering setup that was in the neighborhood of a turn and a quarter, lock to lock, must have made it a bull to handle.

Winchester is at the wheel and the riding mechanic with the white cap is Matt Reese. Reese, who later went with the Holmes outfit, was at this time a chauffeur for Colonel Green, a fact that aided the Green myth. This forest of long pushrods helps to emphasize the tremendous size of the motor and the seats for the crew appear higher than the roofs of today's sedans. Notice the truss rod under the front axle and the four cross engine bearers, the cylinders had copper fins except for the last five which were cast in place and machined.

Mr. Winchester mentions it very casually but it must have been something to handle when that universal pulled out and the shaft was beating out the floorboards!

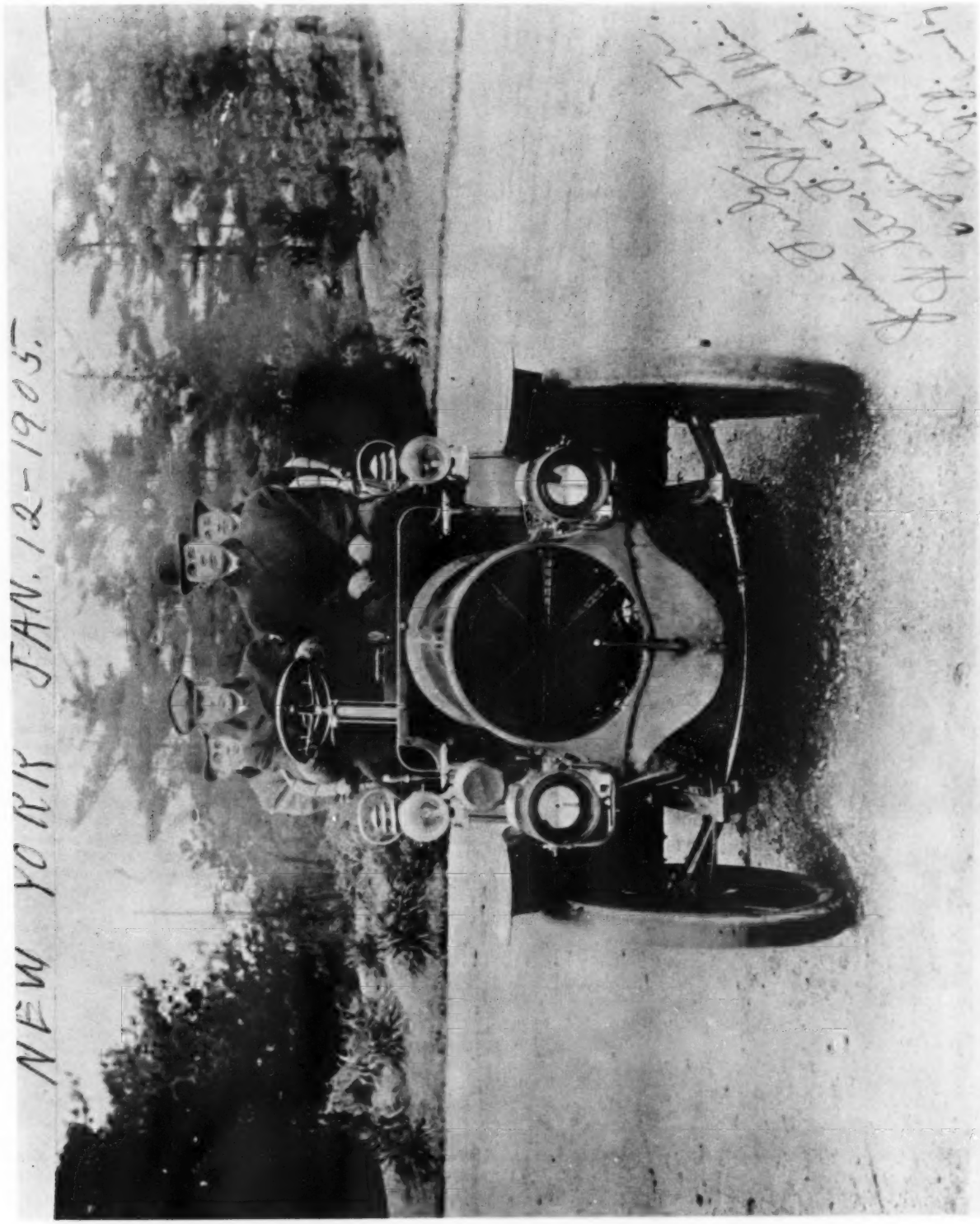


Montague Roberts in the Thomas at the Trials. This shows the great contrast between the "two story" Franklin and the rest of the more conventional racing cars. Notice the length of the crank on the Franklin, Matt Reese must have been a stout lad to swing over that motor. Roberts and the Thomas finished and earned a place on the American Team.

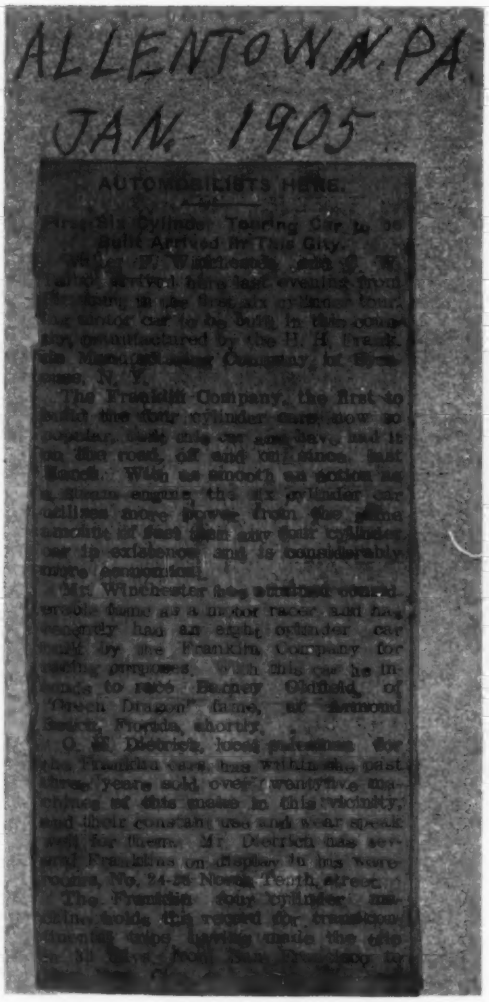


Mr. Alfred Comacho was Sales Manager for the New York dealer at this time. As the message to Winchester indicates he was leaving the Franklin organization. This is a 1905 Model D that had been fitted up as a supply car for the Vanderbilt Trials eight cylinder racer.

This is about the best picture we have come across of this interesting type. It was a four cylinder of twenty horsepower, somewhat smaller engine than the preceding Type C. It was shaft drive through a wet clutch and a progressive gear box to a spurgear differential. Note that the front axle differs from the Type C in being of a simple curve rather than a deeply dropped axle, this style continued in use for many years. In this 1905 and through 1906 the finger latch on the gearshift lever is toward the front, this is a sure method of hastily distinguishing a 1906 from any later year with progressive transmission. Also note the hood, it carries over the locking latch of the cross engine and is the first year Franklin to have both a round grille and a truly round hood.



This picture copied without removal from his album shows him in the first Franklin six in New York. He states in his notes: "I was demonstrating the first 6 cyl. at the N. Y. Auto Show." He later visited dealers in various cities with this car, Philadelphia, Pittsburgh and Allentown among others. His notes mention only the dates and a few cities visited, no comments on the performance of the car. The picture is dated January 12, 1905 and Mr. Winchester states that the car was built sometime during 1904. While this date is not in agreement with some previously published dates for this model Mr. Winchester left the Franklin company for a new job with Pierce-Arrow in the Fall of 1905. We'll leave it at that without further knowledge at this time.



ALLENTOWN PA.
JAN. 1905

AUTOMOBILISTS HERE.

Franklin Cylinder Touring Car Is Sold Arrived in This City.

...

The Franklin Company, the first to build the four cylinder car now so popular, sold this car and have had it on their road, off and on since last March. With as smooth as motion as a steam engine, the six cylinder car utilizes more power from the same amount of fuel than any four cylinder car in existence, and is considerably more economical.

Mr. Winchester has attained considerable fame as a motor racer and has recently had an eight cylinder car built by the Franklin Company for racing purposes. With this car he intends to race Barney Oldfield, of "Green Dragon" fame, at Ormond Beach, Florida, shortly.

O. M. Dietrich, local salesman for the Franklin cars, has within the past three years sold over twenty-five machines of this make in this vicinity, and their constant use and wear speak well for them. Mr. Dietrich has several Franklins on display in his warerooms, No. 24-26 North Fourth street.

The Franklin four cylinder machine holds the record for transcontinental trips, having made the trip in 11 days from San Francisco to

Mr. Winchester also occasionally worked as a test driver. This picture taken some time in 1903 shows him with a 1904 cross engine on the South Heberton hill in East Pittsburgh. Whether actually test driving or practicing for a hill contest he did not explain. It was certainly both cold and muddy to judge by his gear.

In addition to his racing appearances around the country Mr. Winchester did considerable demonstrating of new Franklin models, both in the East and on the West Coast.

This picture of a 1903 Type A was taken in Golden Gate Park in that year, when asked about it Mr. Winchester said that he had been doing some racing in both Los Angeles and San Francisco. He was also doing sales demonstration in both cities.

This is a somewhat unusual view of the little cross engine, usual three quarter shots do not seem to so clearly show the stubbiness of the little seventy two inch "compact."

John Burns Column

The John Burns Column was formerly personally conducted by the late Mr. Burns. It is now handled by a board of Franklin engineers and special experts who, out of their wide experience, will undertake to assist members with their technical problems. In addition it will from time to time, as before, contain tips and suggestions sent in by members.

All correspondence for this column should be direct with the Editorial Office at Cumberland, Maryland. You will be expected to furnish this office with copies of your questions and the answers for possible inclusion in this column.

SERIES 12 PUMP MODIFICATION

RUSSELL DAY from Houston, Texas describes in considerable detail the changes he made in his oil pump and reports on its operation.

Some three months back I gave my series 12 engine a major overhaul. While assembling the engine I was not too satisfied that the oil pump would provide sufficient pressure and volume to meet the lubrication demands of cross country tours. A letter was mailed to Mr. Doman requesting his advice and suggestions relative to the possibility of improving the output of the pump.

Mr. Doman wrote me saying the pump on several Franklin series, in his opinion, did not carry high enough pressures or volume to do a good job of lubricating the engine bearings. He certainly did suggest getting more volume and higher pressures for today's highway driving and tours.

In addition to Mr. Doman's suggestions I received a reply from my good friend Frank E. C. Bell of Calgary, Alberta. With Mr. Carl Doman's and Mr. Bell's ideas and suggestions I modified my pump with some improvements and ideas of my own. I wish full credit, for the good results I realized, be given to Mr. Bell and Mr. Doman.

First we checked the end play of the pump (large gear) to find out the amount of end play. We carefully honed the flat surface of the aluminum upper section of the pump, this is the part having the nine oil ports or oil distributing holes. Next the large pump gear was reworked by precision grinding the upper flat surface to a mirror finish. This was done to remove the grooves and to provide a good oil seal when in operation.

The large oil gear has one hole in it that acts as a valve as it rotates, supplying oil under pressure to the seven mains, generator journal and timing chain—the one other port, or number nine, does not lubricate—it is connected to a line going to the outside and to the oil filter. I ground and filed this hole to an elongated shape. The reasoning behind this was to cut down the degrees of rotation between the fixed oil ports in the pump housing (this ain't easy to explain). In simple words the new gear opening works like a valve—now opens sooner and closing much later.

We used several thicknesses of gasket material before we had just what we wanted. When we had the gasket just right, allowing a minimum of end play, we tested the pump with a pan of oil and slow running drill press. This little jewel pumping SAE 30 oil at 80 degrees was putting out 60 pounds at about 150 RPM.

One more change was made and Mr. Bell suggested this: The pump outlet going to the timing chain was closed with a brass plug. We next connected the return oil line from the purolator to the line going to the timing chain. Instead of the oil pump supplying the lubrication for the generator and timing chain the clean return oil from the purolator now does this job.

By sealing off the pump outlet going to the chain, the large oil pump gear turned some 80 degrees before opening. This provided a large build-up of oil pressure and the connection or oil port receiving this high pressure and volume happens to be the number one main bearing. This is the main taking the thrust and blower load.

We have tested the oil pump under operating conditions by installing an 80 # oil gauge on the inlet line to the purolator. By closing off the purolator return line the pressure will hold a constant reading of 75# with engine running approximately 45 mph with the oil at a temperature of 145 degrees F.

TIMING CHAIN GUARD

JAMES L. HARTLEY of Seattle, Washington sent us a picture and description of his method for preventing jumping timing chains.

I have heard of many cases of timing chains jumping, and had some trouble of that kind myself before I figured out what to do about it. Probably many good Franklins have bitten the dust on account of this trouble. On the 1930 Speedster that I had before, I became quite expert at resetting the timing alongside the road. This gets tiresome. So, about ten years ago, I installed an aluminum block alongside the crankshaft sprocket, cut to just clear the outside of the chain. This has been running ever since on my 1934 Olympic with the chain running loose as you please and never even trying to jump the sprocket. That makes it lots easier on the chain, the generator drive sprocket gear bearing and the driver. It is an aluminum block about 1½" thick, drilled and tapped for ½" studs and attached to the cover plate. It can be made to rub against the back of the chain, as it will soon wear itself so it just clears.

NOTICE

SOMEONE WROTE asking about repairing a cracked cylinder . . . the letter was lost. Recommend that you write to Mr. Buchman on this as details in missing letter would govern the proper-reply.

THE MARKET PLACE

Classified advertisements are free to members, subject to available space. Advertisements from non-members may be accepted, without charge, at the discretion of the Classified Editor.

Members are reminded that misrepresentation in advertisements may result in their being dropped from the Club rolls. They are further reminded that the publishing of their advertisements entails an obligation to answer all inquiries.

Box 535, Cumberland, Maryland

FOR SALE

1927 SERIES 11B SEDAN. Excellent unrestored condition; deep maroon with black fenders. Upholstery and tires still have lots to wear. 33,633 miles on the engine. I would like to sell or trade this car for another Franklin. Price $2,000. Kenneth Jay Artis, 551 West Crystal Lake Avenue, Haddonfield, New Jersey.

BOATTAIL ROADSTER 11A, late 1925 or early 1926. See December 1959 ACN for good picture. Price $1,500. Edward Landmichl, 3826 W. 65 Place, Chicago Lawn 29, Illinois.

1932 OLYMPIC SEDAN. A little rough but complete and restorable. Price $150.00. William H. H. Miller, P.O. Box 1, Port Chester, New York.

1933 OLYMPIC SEDAN. Have $1500 invested, best offer over $700. Car is in immaculate condition. Thomas Acker, 8129 S. Causeway Boulevard, St. Petersburg 7, Florida.

SERIES 12B AIRMAN. Four-door sedan with all new woodwork. All woodwork replaced except one frame rail. Perfect job, doors close from two inches out. Metal excellent, one headlight replated, no other plating necessary. Engine good. Upholstery removed to replace woodwork. Price $300. Herbert Taylor, Box 44, Crewe, Virginia.

1934 OLYMPIC, 5 passenger sedan. New pistons, pins, rings, oil pump gear, sprockets and timing chain. Can be driven anywhere. Price $400. P. S. Corson, Blackwell Road, Rt. 6, Marietta, Georgia.

HAVE EXTRA CYLINDERS, with heads, valves, rocker cages, pushrods for 1930-1934 6 cylinder. Also 6 pistons with pins, rings and aluminum rods. Will trade for V-12 parts, transmission desired, or will sell for $50.00. P. S. Corson, Blackwell Road, Rt. 6, Marietta, Georgia.

1932 PARTS CAR with a good instrument panel, $75.00; 1929 Series 130 coupe with rumble seat, rusty but sound, $265.00. Am dismantling a 1933 Olympic, also have side draft parts including one 4 speed transmission; several good 19 x 6.25 tires and wheels. Arthur Engnell, 20951 Parthenia, Canoga Park, California.

AUXILIARY OIL DASH PUMP, the hand pump type used in some models from 1910 to about 1913. Price $5.50, post paid. C. W. Millard, 8014 Keyes Avenue, Cleveland 4, Ohio.

WANTED

FRANKLIN 1910 THROUGH 1912: Willis Baer, Elkins, West Virginia.

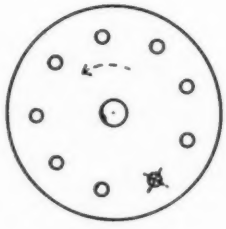
FOR SERIES 12 AIRMAN: Pair sunvisor brackets; hand throttle that goes on steering wheel assembly; pair headlight rims; spare tire lock and keys; door handles and window cranks with backing plates; manual; ignition switch, key, cable and coil; dash light that pulls out on cord; windshield rubber and tools. Herbert Taylor, Box 44, Crewe, Virginia.

TRUNK LID for 1929 Series 135 Convertible Coupe. Edward Landmichl, 3826 West 65 Place, Chicago Lawn 29, Illinois.

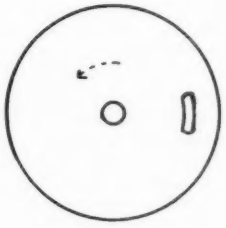
FOR 1929 SERIES 130 CONVERTIBLE COUPE: Parking lights, 6 hub caps for wire wheels; 3 speed transmission in good condition, and a "radiator" cap. Thomas A. Beagle, Fall River Mills, California.

FRANKLIN TOWN CABRIOLET OR LIMOUSINE: Any year, any shape—but prefer the later years of Franklin. Please send any leads to Thomas A. Beagle, Box 342, Fall River Mills, California.

CONNECTING EXHAUST between manifold and intake for Series 12 engine. Russell Day, 9019 Kapri Lane, Houston 25, Texas.



Opening to timing chain sealed off

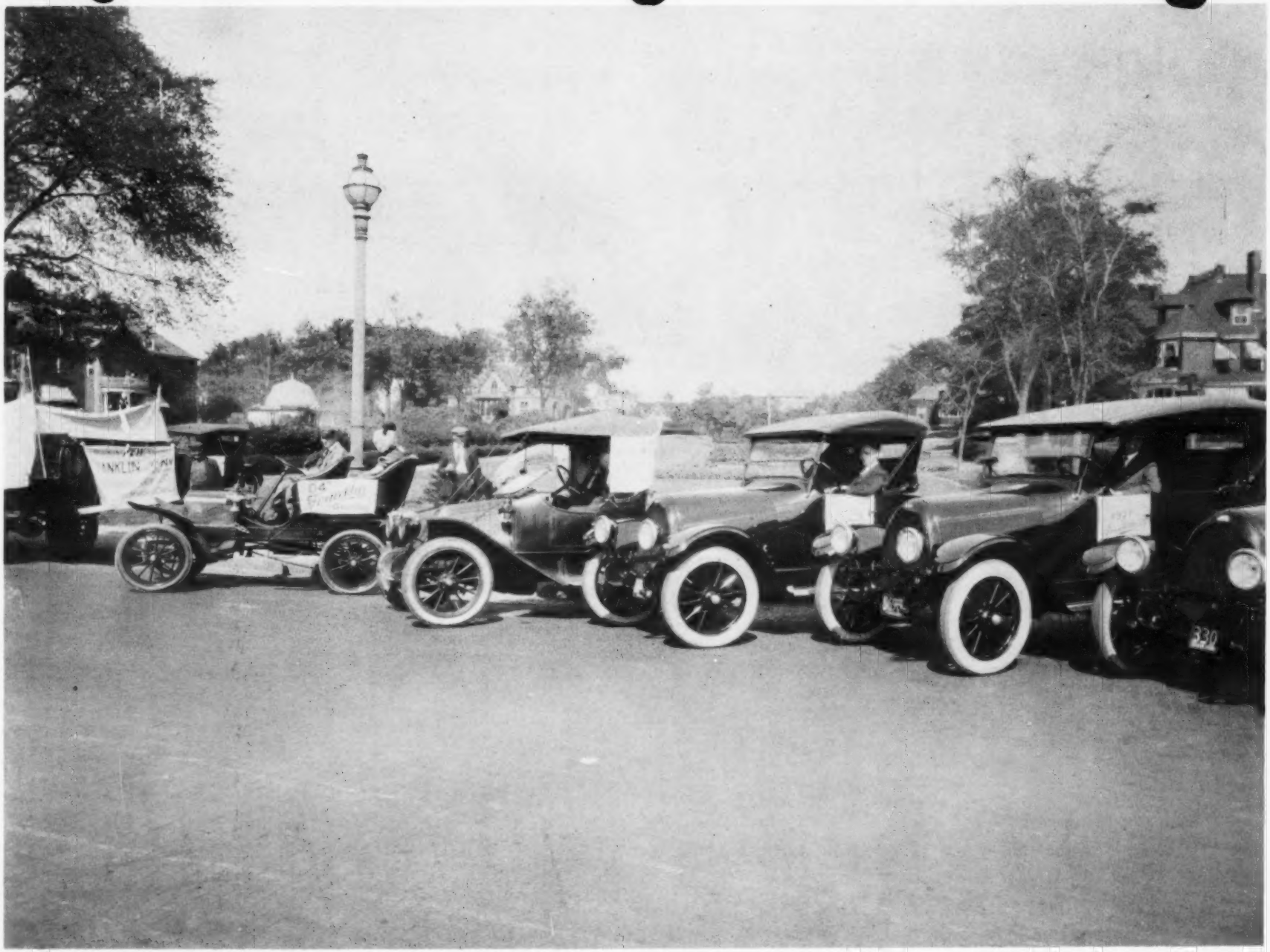


Pump gear showing new oil port shape

SEE RUSSELL DAY ARTICLE ON PAGE 27

The picture on the opposite page was sent to us some time ago by Bill Gibson. It appears to be a showing of 1921 models by the dealer in Lynn, Massachusetts. Dick Hall undertook trying to identify license numbers and other data. About all he managed to unearth was that the dealer in Lynn at that time was F. H. Van Blarcom, Inc., a check with the Registry of Motor Vehicles of that state brought forth the opinion that these numbers had been issued to the Franklin Motor Car Company of Boston. So?

It seems to be no new trait to back date the old ones, the cross engine bearing the "'04" banner is an undeniable 1905. The next car in line is a G Runabout of 1912. In the left background is what appears to be a gazebo . . . remember the play, The Gazebo?

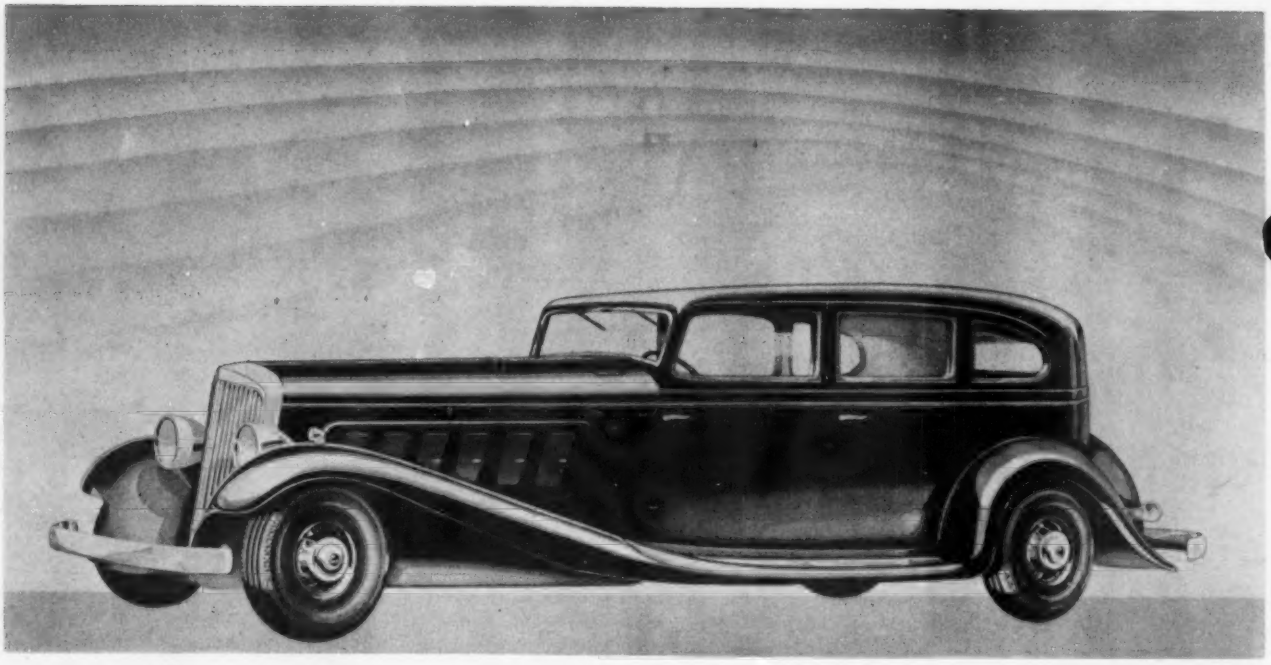


ANNOUNCING THE

SUPERCHARGED AIR-COOLED

Twelve Cylinder

FRANKLIN

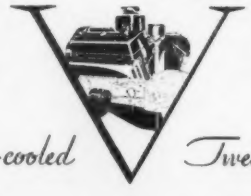


For four years Franklin engineers have studied, experimented, tested, proved—and now present the Supercharged, Air-cooled, Twelve Cylinder Franklin. For the first time in a motor car, this new Air-cooled Twelve incorporates the one thing that has given aviation its greatest impetus—the high-powered, multi-cylinder, air-cooled engine.

To see the car is to feel instantly the freshness and brilliance that Le Baron has styled into the Franklin Twelve—the year's pattern of beauty and luxury. And when you drive this responsive, amply proportioned car of 144-inch wheelbase, that feeling is immediately transformed into thrilling admiration for the sensational performance which carries you to new luxury in travel.

The Supercharged 150 horsepower air-cooled engine is extremely simple in operation, requiring 100 less parts than comparable water cooled engines. So accessible is the engine and so free of complication that low maintenance becomes an important feature. The Supercharger achieves flowing, turbine-like power, smoothness and acceleration by *forcing* a full charge of perfect mixture into *every cylinder equally.* Actual tests show gas consumption is appreciably lower. And engine life is much greater, for even at high touring speeds the engine is purring effortlessly. Pressure air-cooling adds greatly to the economical efficiency of the engine and allows you to *drive all day at high speed* without over-heating or loss of power. In Franklin there is no water to boil, freeze or leak.

You are invited to examine and drive the new Supercharged Twelve as an example of the really modern motor car. Franklin also offers the new Supercharged Airman, with 132-inch wheelbase, 100 H. P. engine. Franklin Automobile Company, Syracuse, New York.



Air-cooled *Twelve*